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Final
Environmental Impact Statement

EXPLORATORY OIL WELL
CHEVRON TABLE TOP PROSPECT



Wasatch-Cache National Forest

January 1994


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FINAL ENVIRONMENTAL IMPACT STATEMENT

Chevron U.S.A. Production Company,
a division of Chevron U.S.A. Inc.

Table Top Prospect Exploratory Oil Well

Lead Agency: USDA Forest Service
Wasatch-Cache National Forest

Cooperating Agency: USDI Bureau Of Land Management
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ABSTRACT

This Environmental Impact Statement documents the analysis of the potential effects of developing an exploratory oil well, Chevron Table Top Prospect, oil and gas lease U-24446, on lands administered by the Wasatch-Cache National Forest in Summit County, Utah. The existing condition of the environmental resources in the project area is documented and potential impacts to those resources as a result of implementing the proposed action are addressed. The proposed action has been identified as the preferred alternative.

January 1994



CONTENTS

CONTENTS

Page

TABLE TOP PROSPECT PROJECT ENVIRONMENTAL IMPACT STATEMENT

SUMMARY S-1
- PURPOSE AND NEED S-1
- SCOPE OF THIS ANALYSIS S-2
- DECISIONS TO BE MADE S-2
- RELATION TO FOREST PLAN S-2
- SCOPING S-3
- ALTERNATIVES IDENTIFIED S-4
- ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED STUDY S-4
- ALTERNATIVES CONSIDERED IN DETAIL S-5
- AFFECTED ENVIRONMENT S-6
- ENVIRONMENTAL CONSEQUENCES S-6
- CONFORMANCE WITH THE FOREST PLAN S-8
- RELATIONSHIP BETWEEN SHORT-TERM USE AND LONG TERM PRODUCTIVITY .. S-8
- IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES S-8

CHAPTER 1 - INTRODUCTION 1-1
- PURPOSE AND NEED 1-1
- SCOPE OF THIS ANALYSIS 1-3
- DECISIONS TO BE MADE 1-3
- AUTHORIZING ACTIONS 1-3
- BACKGROUND - THE PERMITTING PROCESS 1-4
- RELATION TO FOREST PLAN 1-4

CHAPTER 2 - ALTERNATIVES INCLUDING THE PROPOSED ACTION 2-1
- ANALYSIS PROCESS 2-1
  - Scoping 2-1
- CONDITIONS COMMON AMONG ACTION ALTERNATIVES 2-3
  - Schedule 2-3
  - Workforce and Transportation 2-3
  - Road Upgrade and Construction 2-7
  - Well Site 2-7
  - Drilling Practices and Policies 2-9
- ALTERNATIVES IDENTIFIED 2-11
- ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED STUDY 2-11
  - Well Site 2-11
  - Road Alternatives 2-12
  - Gravel Source Alternatives 2-13
  - Crew Camp 2-13
- ALTERNATIVES CONSIDERED IN DETAIL 2-14
  - Proposed Action 2-14
  - No-Action Alternative 2-19
  - Well Site Alternatives 2-20
  - Road Management Alternatives 2-20
- COMPARISON OF ALTERNATIVES 2-21

No Action 2-21
Alternative Well Site A 2-21
Alternative Well Site B 2-22
COMPATIBILITY WITH ISSUES, STIPULATIONS, AND FOREST PLAN DIRECTION . . . 2-22

CHAPTER 3 - AFFECTED ENVIRONMENT 3-1
INTRODUCTION 3-1
AFFECTED RESOURCES 3-1
Geology 3-1
Soils and Landforms 3-3
Water Resources 3-8
Ground Water 3-8
Surface Water 3-10
Vegetation 3-13
Wildlife 3-17
Special-Status Species 3-18
Fisheries 3-20
Air Quality 3-21
Wilderness 3-21
Roadless Character 3-22
Natural Integrity 3-24
Apparent Naturalness 3-24
Remoteness 3-24
Solitude 3-24
Special Features 3-25
Manageability/Boundaries 3-25
Wild and Scenic Rivers 3-26
Land Use 3-27
Transportation and Recreation 3-27
Range 3-29
Timber 3-29
Fire Management 3-30
Socioeconomics 3-30
Potentially Affected Utah Communities 3-31
Potentially Affected Wyoming Communities 3-31
Evanston 3-31
Other Communities 3-32
Public Preferences for Management of the Project area 3-32
Priority to Consumptive Activities 3-32
Priority to Environmental Protection and Preservation 3-33
Priority to Recreation and Restricted Traditional Uses 3-33
Demographics 3-33
Economic Activities 3-36
County Revenues 3-37
Visual Characteristics 3-39
Landscape Character Types and Variety Classes 3-40
Viewpoint Inventory and Visual Sensitivity Analysis 3-41
Travel Routes 3-41
Recreation Trails 3-41
Developed Recreation Sites 3-42
Visual Quality Objectives 3-42

Cultural Resources 3-43
Cultural Resource Regulatory Requirements 3-44
Cultural History Overview 3-45
Inventory Results 3-47

CHAPTER 4 - ENVIRONMENTAL CONSEQUENCES 4-1
GEOLOGY 4-2
Impacts Common to All Action Alternatives 4-2
Effects of Each Alternative 4-2
Mitigation 4-3
Cumulative Effects 4-3
SOILS AND LANDFORMS 4-3
Impacts Common to All Action Alternatives 4-3
Effects of Each Alternative 4-4
Mitigation 4-5
Cumulative Effects 4-6
WATER RESOURCES 4-6
Impacts Common to All Action Alternatives 4-7
Effects of Each Alternative 4-8
Mitigation 4-9
Cumulative Effects 4-10
VEGETATION 4-10
Impacts Common to All Action Alternatives 4-11
Effects of Each Alternative 4-12
Mitigation 4-14
Cumulative Effects 4-14
WILDLIFE 4-15
Impacts Common to All Action Alternatives 4-15
Effects of Each Alternative 4-17
Mitigation 4-19
Cumulative Effects 4-20
FISHERIES 4-20
Impacts Common to All Action Alternatives 4-20
Effects of Each Alternative 4-21
Mitigation 4-21
Cumulative Effects 4-21
AIR QUALITY 4-22
Impacts Common to All Action Alternatives 4-22
Effects of Each Alternative 4-23
Mitigation 4-23
Cumulative Effects 4-24
WILDERNESS 4-24
Impacts Common to All Action Alternatives 4-24
Effects of Each Alternative 4-24
ROADLESS CHARACTER 4-25
Impacts Common to All Action Alternatives 4-25
Effects of Each Alternative 4-25
Cumulative Effects 4-29
WILD AND SCENIC RIVERS 4-29
Impacts Common to All Action Alternatives 4-29
Effects of Each Alternative 4-30

LAND USE 4-30
Impacts Common to All Action Alternatives 4-30
Effects of Each Alternative 4-31
Mitigation 4-32
Cumulative Effects 4-33
FIRE MANAGEMENT 4-33
Impacts Common to All Action Alternatives 4-33
Effects of Each Alternative 4-33
Mitigation 4-33
Cumulative Effects 4-33
TIMBER 4-34
Impacts Common to All Action Alternatives 4-34
Effects of Each Alternative 4-34
Mitigation 4-35
Main Fork Timber Sale Cumulative Effects 4-35
SOCIOECONOMICS 4-36
Impacts Common to All Action Alternatives 4-36
Economic Effects 4-36
Fiscal Effects 4-37
Social Effects 4-37
Effects of Each Alternative 4-37
Mitigation 4-38
Cumulative Effects 4-38
VISUAL CHARACTERISTICS 4-39
Impacts Common to All Action Alternatives 4-40
Effects of Each Alternative 4-41
Mitigation 4-41
Cumulative Effects 4-42
NOISE 4-42
Impacts Common to All Action Alternatives 4-42
Effects of Each Alternative 4-42
Mitigation 4-43
Cumulative Effects 4-43
CULTURAL RESOURCES 4-43
Impacts Common to All Action Alternatives 4-43
Effects of Each Alternative 4-46
Mitigation 4-46
Cumulative Effects 4-47
CONFORMANCE WITH THE FOREST PLAN 4-48
RELATIONSHIP BETWEEN SHORT-TERM USE AND LONG-TERM PRODUCTIVITY . . 4-48
IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES 4-48
UNAVOIDABLE ADVERSE ENVIRONMENTAL EFFECTS 4-48

CHAPTER 5 - CONSULTATION AND COORDINATION 5-1
FEDERAL 5-1
Department of Agriculture 5-1
Wasatch-Cache National Forest 5-1
Evanston Ranger District 5-1
Department of the Interior 5-1
Bureau of Land Management 5-1
Utah State Office 5-1

Salt Lake District Office . . . 5–1
Bear River Resource Area . . . 5–1
Fish and Wildlife Service . . . 5–1
Geological Survey . . . 5–1
Water Resources Division . . . 5–1
Department of the Army . . . 5–2
Corps of Engineers . . . 5–2
STATE . . . 5–2
Utah . . . 5–2
Utah Division of Oil, Gas and Mining . . . 5–2
Utah Division of Wildlife Resources . . . 5–2
Utah Natural Heritage Program . . . 5–2
Utah Office of Planning and Budget . . . 5–2
Utah State Historic Preservation Office . . . 5–2
Wyoming . . . 5–2
Wyoming Department of Employment . . . 5–2
Wyoming Division of Research and Statistics . . . 5–2
COUNTY . . . 5–2
Utah . . . 5–2
Summit County Auditor's Office . . . 5–2
Wyoming . . . 5–2
Uinta County Assessor's Office . . . 5–2
ORGANIZATIONS . . . 5–2
National Council of Paper Industries for Air and Stream Improvement (NCASI) . . . 5–2

CHAPTER 6 – PREPARERS AND CONTRIBUTORS . . . 6–1
WASATCH-CACHE NATIONAL FOREST . . . 6–1
Supervisors Office . . . 6–1
Evanston Ranger District . . . 6–1
BUREAU OF LAND MANAGEMENT . . . 6–1
DAMES & MOORE . . . 6–1
Technical Support . . . 6–2

CHAPTER 7 – LITERATURE CITED . . . 7–1
GEOLOGY . . . 7–1
SOILS . . . 7–2
WATER RESOURCES . . . 7–2
Ground Water . . . 7–2
Surface Water . . . 7–3
VEGETATION . . . 7–4
WILDLIFE . . . 7–5
AIR QUALITY . . . 7–7
LAND USE . . . 7–7
VISUAL CHARACTERISTICS . . . 7–7
SOCIOECONOMICS . . . 7–8
CULTURAL RESOURCES . . . 7–9

CHAPTER 8 – GLOSSARY . . . 8–1
ACRONYMS AND ABBREVIATIONS . . . 8–1
GLOSSARY . . . 8–3

CHAPTER 9 - COMMENTS AND RESPONSES 9-1
INTRODUCTION 9-1
GENERAL 9-1
ALTERNATIVES 9-6
CUMULATIVE EFFECTS 9-8
ROADS AND ROAD MANAGEMENT 9-10
WILDLIFE 9-11
WATER, HYDROLOGY, AND SOILS 9-14
WILD AND SCENIC RIVERS 9-17
OLD GROWTH 9-17
ROADLESS AREA AND PRIMITIVE RECREATION 9-17
CULTURAL RESOURCES 9-18
VISUAL RESOURCES 9-19
RESPONSES TO AGENCY LETTERS 9-20
LIST OF COMMENTERS TO THE DRAFT ENVIRONMENTAL IMPACT STATEMENT . . 9-39

CHAPTER 10 - LIST OF AGENCIES, ORGANIZATIONS, AND PERSONS TO WHOM THIS FEIS WAS SENT 10-1

APPENDIX A - AUTHORIZING ACTIONS A-1

APPENDIX B - APPLICATION FOR PERMIT TO DRILL AND SURFACE USE PLAN B-1

APPENDIX D - SUMMARY OF MITIGATION AND MONITORING D-1

APPENDIX E - EROSION CONTROL AND RECLAMATION E-1

APPENDIX G - THREATENED AND ENDANGERED SPECIES DEFINITIONS G-1

APPENDIX H - FOREST SERVICE VISUAL MANAGEMENT SYSTEM H-1

APPENDIX J - WETLANDS DELINEATION AND ANALYSIS J-1

APPENDIX K - WATER MONITORING PROGRAM K-1

INDEX I-1

LIST OF TABLES

Table Number	Title	Page
Table S-1	Summary of Disturbance	S-6
Table 2-1	Equipment and Personnel	2-5
Table 2-2	Summary of Disturbance	2-14
Table 2-3	Comparison of Issues, Stipulations, Forest Plan Direction	2-23
Table 3-1	Land and Soil Types	3-5
Table 3-2	Water-Right Ownership, Location, and Use	3-9
Table 3-3	Sensitive Plant Species	3-16
Table 3-4	Actual and Projected Population, 1980-2000	3-35
Table 3-5	Total Personal Income (TPI) and Per Capita Income (PLI) For Summit County, Utah[1], and Uinta County, Wyoming[2]	3-36
Table 3-6	Actual Total Nonagricultural Employment, 1980-1988[1][2], and Estimated Total Nonagricultural Employment, 1990-1995[3][4]	3-37
Table 3-7	Summit County Revenue Fiscal Year 1990	3-38
Table 3-8	Uinta County Revenue Fiscal Year 1989-1990	3-39
Table 3-9	Visual Quality Objectives (VQO) and Type of Activity or Structure	3-43
Table 3-10	Summary of Previous Cultural Resource Surveys	3-49
Table 4-1	Vegetation Type Affected by Alternative Well Site A	4-13
Table 4-2	Vegetation Type Affected by Alternative Well Site B	4-14
Table 4-3	Acres of Vegetation Removed For Alternative Well Site A	4-17
Table 4-4	Acres of Vegetation Habitat Removed For Alternative Well Site B	4-18

LIST OF FIGURES

Figure Number	Title	Follow Page
1-1	Project Vicinity	1-1
1-2	Project Location	1-4
2-1	Schedule	2-4
2-2	Alternatives Including Proposed Action	2-25
2-3	Well Pad Layout	2-25
2-4	Well Pad Site Plan	2-25
2-5	Reclaimed Location	2-25
3-1	Landforms, Soils, and Potential Hazards	3-49
3-2	Slope Failure Hazards	3-49
3-3	Location of Water Rights	3-49
3-4	Major Surface Water Features and Sediment Yield Rates	3-49
3-5	Designated Old Growth Stands	3-49
3-6	Recreation Opportunities Spectrum	3-49
3-7	Roadless Area	3-49
3-8	Timber Working Groups	3-49
3-9	Landscape Character Type and Variety Class	3-49
3-10	Visual Quality Objectives Inventory	3-49
3-11	Howe Flume Historic District	3-49

SUMMARY

TABLE TOP PROSPECT PROJECT
ENVIRONMENTAL IMPACT STATEMENT
SUMMARY

An Application for Permit to Drill (APD) has been submitted by Chevron U.S.A. Production Company (Chevron), a division of Chevron U.S.A. Inc. to exercise lease rights and drill an exploratory oil and gas well on the Evanston Ranger District of the Wasatch-Cache National Forest. The proposed well would be located within the main fork of the Stillwater drainage in T1N R10E SW1/4 SW1/4 Section 16, Summit County, Utah (Figure S-1).

The proposed exploratory well would be drilled on Federal oil and gas lease U-24446 to determine if oil and gas reserves occur in geologic formations underlying the lease, and if so, whether or not they are economically recoverable.

Chevron's proposed action includes:

- drilling, completing, and testing, and possible production at, a single exploratory oil well on 3.43 acres in T1N R10E SW1/4 SW1/4 Section 16 (Alternative Well Site A)
- restoring 0.8 mile of Stillwater Road (Forest Road No. 057), improving 2.1 miles of Peninsula Road (Forest Road No. 306), relocating 2.0 miles of the Main Fork Road, and constructing 0.8 mile of new road to the proposed well site
- constructing a .5-acre gravel source pit in T1N R10E NE1/4 NE1/4 Section 8 (Alternative Gravel Site C)to provide gravel to surface the existing and new road and well pad
- graveling 5.7 miles of the road into the well site and the 3.43-acre well pad
- drilling a temporary water well on the well pad to provide water for drilling and dust control
- reclaiming all surface disturbance at the well site if the well is not successful
- hauling potable water by truck from Evanston
- constructing a water pipeline to the location (if needed)

The Forest Service, as the surface management agency, in cooperation with the Bureau of Land Management (BLM), who is responsible for the management of the Federal mineral estate, have identified the need to prepare an environmental impact statement (EIS) to evaluate and disclose the potential impacts to the environment that could result from the proposed action and identified alternatives to that action.

If approved, the activities associated with the proposed action would begin in July or August of 1994. Reclamation would begin upon completion of activities, depending on weather conditions.

PURPOSE AND NEED

The purpose of the proposed exploratory well is to determine whether or not economically recoverable reserves of oil and/or gas are present within the geologic formations underlying this lease and within the Table Top Federal Exploratory Unit.

Exploration and development of Federal minerals by private companies or individuals is authorized and encouraged by the Mineral Leasing Act of 1920 and the Federal Land Management Policy Act of 1976 (FLPMA). Federal mineral leasing encourages development of domestic oil reserves in an effort to reduce the United States' (US) dependence on foreign energy sources. Chevron's proposed action is consistent with the US government's energy and land use policy.

The purpose of this analysis is to evaluate and disclose the potential environmental effects associated with the proposed action and alternatives to the proposed action. This analysis does not make a decision, but provides relevant information for public review and comment and from which the deciding officers can make sound resource decisions.

SCOPE OF THIS ANALYSIS

This analysis only addresses the proposed action of drilling an exploratory well and associated surface uses. The facilities that would be needed to produce this one well are addressed, should economically recoverable reserves of oil and gas be discovered, but full-field development is not part of the proposal and will not be addressed at this time. The proposed action involves an exploratory well and the majority of wells in this category do not result in a field discovery. Should this well result in a field discovery, an additional analysis would be completed at that time, in accordance with the National Environmental Policy Act of 1969 (NEPA), which would address full-field development.

DECISIONS TO BE MADE

The Forest Supervisor is the Forest Service official responsible for making the following decisions and ensuring that the decisions are consistent with current regulations, the Forest Plan direction, and with the rights granted by the Federal oil and gas lease; as required by 36 CFR 228.107:

- whether or not to approve the Surface Use Plan of Operations
- whether or not to authorize the use of existing Forest System roads through the issuance of a road use permit
- future management of the road to the well site (if access is by road)

The District Manager of the Salt Lake District of the BLM is the official responsible for approving the Application for Permit to Drill (APD), and any subsequent changes or modifications of the APD requested by submission of a Sundry Notice.

RELATION TO FOREST PLAN

The Forest Plan, approved in September of 1985, guides all natural resource management activities and establishes long-term management standards and guidelines for the Forest. The Forest Plan describes resource management practices, levels of resource production and management, and the availability and suitability of lands for resource management. Generally, the Forest Plan provides for coordinated multiple-use management of timber, range, wildlife, watershed, developed and dispersed outdoor recreation, minerals, and wilderness resulting in sustained yields of goods and services. Forest-wide management goals include the integration of exploration and development of mineral and energy resources on the Forest with the use and protection of other resource values and administering the mineral resources of the Forest to provide for the needs of the American people. It is important to note that no site-specific or project-specific decisions are made in or by the Forest Plan.

This analysis is tiered to the EIS completed for the Wasatch-Cache Land and Resource Management Plan (Forest Plan). The leases addressed in this EIS were issued prior to the development of the Forest Plan and Forest Plan standards and guidelines would be applied to the extent that lease rights are not violated.

SCOPING

Integral to and initiating the environmental analysis process is the solicitation of comments from the various Federal, State, County, and local agencies, and interested organizations and individuals to assist in incorporating the most accurate and current environmental information and public opinion into planning and decision-making. The initial opportunity to comment on the project was "scoping" – an information-gathering process open to the public early in the process.

In early September, 1991, the Forest mailed a scoping document, in the form of a newsletter, to the 227 parties on the project mailing list. On September 17, 1991, a Notice of Intent to conduct environmental analysis was published in the Federal Register. The scoping period ended in early October, 1991.

A total of 116 commentors responded to the solicitation. The comments received were reviewed and summarized, and assisted in identifying the range, or scope, of issues and concerns to be addressed during the environmental studies in preparation of the environmental document. The comments ranged from full support of the project to strong opposition. Issues identified from the comments are listed below.

Issue 1 – The effects of drilling and production of the oil well on local and state economies Concerns were expressed regarding the effects of this project and potential subsequent oil projects (primarily production), to local, State, and Federal economies. Development would provide economic benefits; from tax revenues, jobs, goods and services; for the affected State and local economies, as well as the Federal government. Such benefits would alleviate tax burdens and provide needed funds for the affected communities. Also, the increase in domestic production of energy resources would reduce the United States' dependence on foreign energy resources.

Other concerns were expressed that the potential economic benefits would be negligible compared to the potential effects to the natural resource values of the area.

Issue 2 – The effects of drilling and production of the oil well on the values and characteristics of the roadless area Concerns were expressed regarding the potential impacts to the roadless area. Some individuals believe that new roads in the area would result in increased human intrusion and cause irreparable change to the roadless area. They believe that the values of solitude provided by the area are unique and should not be affected.

Issue 3 – The effects of drilling and production of the oil well on wildlife species and habitat Concerns were expressed regarding the potential effects to the wildlife and habitat of the area, which is presently undiminished.

Issue 4 – The effects of drilling and production of the oil well on existing recreation uses in the area Concerns were expressed that the effects of the project would alter the recreational setting and experience presently provided by the area. Roads introduced into the area would provide access for vehicles and promote increased human activity. Recreationists favoring rustic, dispersed recreation opportunities believe that the uses of recreation and the drilling and production of the oil well are incompatible and oppose development in this area. Expressed in relation to this concern, were the effects of this project on other resources such as wildlife, habitat, water, etc. (which are included in discussions of other issues).

Other recreationists favor the opportunity for increased access into these areas – leaving roads open to the public, reclaiming the well site upon completion of project activities, and developing recreation sites such as trailheads.

Issue 5 – The effects of drilling and production of the oil well on road management in the future As mentioned previously, some individuals expressed concern that roads introduced in the area would provide access for vehicles and promote increased human activity – resulting in both direct and indirect impacts to the area.

Other recreationists favor the opportunity for increased access into these areas – leaving roads open to the public.

Issue 6 – The effects of drilling and production of the oil well on water quality in the Stillwater drainage Concerns were expressed that ground-disturbing activities associated with the project (construction, drilling, and production) would disturb soils and could cause consequent effects on soils and water. Potential effects to soils include compaction, displacement, and loss of vegetation cover resulting in erosion. Soil-disturbing activities such as construction and vehicular traffic, could result in erosion or other displacement of soils (for example, at stream crossings) and may cause sedimentation in streams with consequent degradation of water quality and aquatic habitat (for example, fisheries).

Other effects to water quality could result in contamination of ground and surface water from possible fuel and/or oil spills.

Issue 7 – The effects of drilling and production of the oil well on the aesthetic and visual characteristics of the area Concerns were expressed regarding the effects of project activities on the natural beauty of the area, particularly from the Mirror Lake Highway. Some comments addressed the temporary nature of the activities that are considered most obtrusive to the character of the area (that is, primarily drilling).

Issue 8 – The effects of drilling and production of the oil well on the water supply to the Christmas Meadows summer-home area Concerns were expressed regarding the potential effects of project activities on the quantity of nearby spring water used to for domestic use by the residents of the Christmas Meadows summer-home area.

Other comments received were not identified as significant issues to be analyzed. Some of the comments will be addressed in this EIS as management requirements that must be followed by Chevron. Other comments were beyond the scope of this analysis (for example, full-field development).

Following review and analysis of the comments received, project personnel from the Forest met on October 31, 1991, to discuss the issues and determine the type of documentation needed. Public comments demonstrated a wide range of concern over effects of introducing a road into a roadless area. The controversy over the effects led to an agreement and decision to prepare an environmental impact statement (EIS) rather than an environmental assessment. A Notice of Intent to prepare an EIS was published in the Federal Register on January 8, 1992. Public comments were accepted until January 31, 1992. These comments plus comments received during the scoping period were used in directing the preparation of the EIS.

Upon completion of the draft EIS (DEIS), the DEIS was released for public review and comment on the adequacy of the document. During the comment period which ended February 19, 1993, the Forest conducted public meetings to receive comments. At the end of the comment period, the written and oral comments were reviewed, summarized, and evaluated. The comments and responses to those comments are included in the final EIS.

ALTERNATIVES IDENTIFIED

The alternatives considered for this project include:

- no action
- three alternative well sites
- three road location alternatives
- three road management alternatives
- alternative means of transportation (helicopter)
- four alternative gravel sources
- alternative means of procuring water
- crew camp sites

Some of the alternatives were considered, but were eliminated from detailed analysis. Others of the alternatives were considered in detail. Refer to Figure S-2.

ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED STUDY

One alternative for a well site location close to existing heavily used roads was considered. Any well site location closer to existing, more heavily used roads would be further removed from the target geologic structure and greatly increase the risk of a dry hole.

Two alternative road locations were considered and eliminated from detailed study because of environmental impacts and additional expense. One alternative would have begun at the Mirror Lake Highway and crossed the Hayden Fork and connected into the Main Fork road. The second alternative would have started at the end of the Peninsula Road, crossed the Main Fork immediately, and then proceeded along the bench on the east side of the Main Fork to reach the proposed well site in Section 16.

Helicopter access was considered as an alternative, but eliminated from detailed study. There is no helicopter/drill rig package available in North America capable of drilling the required depth and the additional impacts and costs were not deemed reasonable by the Forest Service.

Three alternative gravel sources were considered and eliminated from detailed study. Hauling gravel from Evanston was eliminated from study because it was considered unnecessary and costly. Three other gravel sources in the immediate vicinity of the proposed project were eliminated from detailed study because they did not contain adequate clay, to use as a binder for the fines.

Construction of a crew camp was considered and eliminated from detailed study in favor of the crew commuting to and from Evanston on a daily basis.

ALTERNATIVES CONSIDERED IN DETAIL

Alternatives addressed in this document:

- no-action alternative
- two alternative well sites
  - Alternative Well Site A (T1N R10E SW1/4 SW1/4 Section 16)
  - Alternative Well Site B (T1N R10E NW1/4 NE1/4 Section 21)
- alternatives for road management
  - open-road alternative
  - closed-road alternative
  - reclaimed- or rehabilitated-road alternative

A summary of the disturbance by acres is provided on Table S-1.

The proposed action includes:

- drilling, completing, and testing, and possible production at, a single exploratory oil well on 3.43 acres in T1N R10E SW1/4 SW1/4 Section 16 (Alternative Well Site A)
- restoring 0.8 mile of Stillwater Road (Forest Road No. 057), improving 2.1 miles of Peninsula Road (Forest Road No. 306), relocating 2.0 miles of the Main Fork Road, and constructing 0.8 mile of new road to the proposed well site
- constructing a .5-acre gravel source pit in T1N R10E NE1/4 NE1/4 Section 8 (Alternative Gravel Site C)to provide gravel to surface the existing and new road and well pad
- graveling 5.7 miles of the road into the well site and the 3.43-acre well pad
- drilling a temporary water well on the well pad to provide water for drilling and dust control
- reclaiming all surface disturbance at the well site if the well is not successful
- hauling potable water by truck from Evanston
- constructing a water pipeline to the location (if needed)

TABLE S-1
SUMMARY OF DISTURBANCE
(Acres)

Project Component	Alternative Well Site A	Alternative Well Site B
Road Restoration	.77	.77
Road Improvement	2.04	2.04
Road Relocation	7.27	7.27
Road Construction	2.9	9.68
Gravel Source	.5	.5
Well Site	3.43	3.5
TOTAL	16.91	23.76

Note: Road width disturbance estimated to be: eight feet for road restoration and improvement, 30 feet for road relocation and construction on slopes less than 40 percent, and 50 feet for construction on slopes over 40 percent.

AFFECTED ENVIRONMENT

Data were collected for the following resources: geology, minerals, soils, surface and ground water, vegetation, wetlands, threatened and endangered plant and animal species, wildlife, fisheries, air quality, land uses, transportation, recreation, range, timber, roadless areas, visuals, socioeconomics, and cultural resources.

ENVIRONMENTAL CONSEQUENCES

Project components common to the action alternatives include 4.98 miles of road work, the gravel source, and a temporary above-ground water pipeline (if constructed). The road work, whether restoration, improvement, relocation, or construction, would result in removal of vegetation. The road design would incorporate Forest road-design criteria and specifications to ensure a quality road and road maintenance. The road would be capped with gravel to reduce the potential for erosion. Early in the road work, a temporary bridge would be placed over the Main Fork. This would allow transport of vehicles and equipment to the east side of the Main Fork without an in-stream crossing that would result in sedimentation. Once crossed, a bridge satisfying Forest Service standards would be constructed.

The Peninsula Road, including the road along the Main Fork, would remain open to the public to the point where the new bridge would be installed. The portion of the road east of the new bridge would be closed to public traffic at all times.

Sightings of and the potential for the occurrence of northern goshawk in the study area prompted a survey in June of 1992. One nest was found in the vicinity of the Peninsula Road. At the time just prior to construction (June), if the nest is occupied, construction activities and traffic will be restricted within the 420 acre Post-fledgling Family Area (PFA) surrounding the nest.

A number of wetland areas occur in the vicinity of the project area. The results of survey delineation, and mapping, completed in July of 1992, indicated that some of the wetlands would be impacted where the road is relatively close to wetland seeps. These wetland areas would be avoided, to the the extent possible, by the road and construction activities. On a case-by-case basis, the road would be placed and constructed in such a manner that drainages to and/or from the wetland areas are not intercepted or affected.

The road would have to cross one wetland area in Section 17. Mitigation has been recommended. Chevron and the Forest have been coordinating with the Army Corps of Engineers (COE) and have submitted project development plans to the COE for review and approval. The COE has verified that this proposal is authorized by Nationwide Permit Number 26.

The .5-acre gravel source would be located at the end of the existing Peninsula Road and would provide between 5,000 and 7,000 cubic yards of material for capping the road and the well pad. When developing the gravel source site, topsoil would be stockpiled for the short time the site would be in use (about three weeks). When the work is completed and the gravel source is no longer needed, the site would be reclaimed.

Two rivers considered in the eligibility evaluation that are potentially affected by this project are the Main Fork and Stillwater Fork of the Bear River. While both rivers were found to be free-flowing, only the Stillwater Fork was determined to be outstandingly remarkable because of its scenic quality. The road reconstruction associated with this project will not effect the eligibility or classification potentials of the Stillwater Fork, therefore, the opportunity for designating it as a scenic river in the future is not foreclosed by allowing the road reconstruction described in the EIS.

No threatened, endangered, or sensitive plant species were found during a survey conducted for this project in July of 1992.

If the water well at the well site does not supply sufficient amounts of water, a temporary 3-inch-diameter, 1,500-foot-long pipeline would be installed above ground from the Main Fork to the well site. No vegetation would be removed. It is anticipated that, although vegetation would be crushed, the roots would be left intact allowing the vegetation to regenerate quickly.

No Action

Under this alternative, the environment would remain as it exists with no well site or road constructed. However, with this alternative the primitive road crossing the Hayden Fork would remain. Currently, erosion from vehicle ruts in the adjacent road and the in-stream crossing of the Hayden Fork contribute to sedimentation in the stream.

Alternative Well Site A

Construction of the well pad (3.43 acres), road work (12.98 acres), and gravel source (.5 acre) would result in 16.91 acres of disturbance. Inherent erosion hazards are low to moderate for all disturbance. Vegetation is primarily mature post- and pole-size lodgepole pine. At the well site and along the road, approximately 12 to 14 acres of mature age class lodgepole pine would be removed. The effects of removing habitat would be essentially the same at either site.

To access Alternative Well Site A, a total of 4.98 miles of road work would be required. Of that 4.98 miles, .8 mile of the work would be construction of new road. The well pad and most of the road beyond the existing Peninsula Road would be within an area having roadless characteristics. The drilling rig would be only slightly visible during daylight from a point on the Mirror Lake Highway about 3.5 miles north of the site. At night, the lights from the drilling rig would be noticeable, but not dominant. The drilling rig would be visible for approximately 2.5 miles from the Hell Hole Lake Trail and from the Main Fork Road. However, the impacts would be short term (only while the drilling rig is present). Production facilities, if needed, would be screened from view.

Construction of the well site would not result in impacts to cultural resources.

Alternative Well Site B

Construction of the well pad (about 3.5 acres), road work (19.76 acres), and gravel source (.5 acre) would result in 23.76 acres of disturbance. Inherent erosion hazards at the well site are low to moderate; however, the portion of the road along the ridge to the site are mountain slope lands on shallow soils on slope gradients ranging from 35 to 70 percent. Erosion and stability hazards are moderate to high, construction hazard potential is high, and reclamation constraints are moderate to high. The alternative well site is located in an extensive wet meadow complex that would require extensive mitigation to develop. Vegetation is primarily mature lodgepole pine. At the well site, vegetation also includes wet meadow species of alpine timothy, tall larkspur, bluejoint reedgrass, and sedges, and subalpine fir along the wet meadow are interspersed among the scattered stands of trees. At the well site and along the road, approximately eight or nine acres of mature age class lodgepole pine would be removed. The effects of removing habitat would be essentially the same at either site.

To access Alternative Well Site B, a total of 7.3 miles of road work would be required. Of that 7.3 miles, 2.4 miles of the work would be construction of new road. The well pad and 2.4 miles of new road would be within the roadless area. The drilling rig would not be visible from the Mirror Lake Highway, Stillwater, Peninsula, or Main Fork roads. At one point (at similar elevation) along the Hell Hole Lake Trail, the drilling rig may be visible. As previously stated, impacts would be short term (only while the drilling rig is present). Production facilities would be screened from view. The portion of the road to the site that would be located on the side of the steep slope may be visible from the Mirror Lake Highway approximately 3.5 miles to the north.

Construction of the well site would not result in impacts to cultural resources. Consultation with the State Historic Preservation Office has been completed.

CONFORMANCE WITH THE FOREST PLAN

The proposed action with the planned mitigation measures has been analyzed and found to be in conformance with the Forest Plan, goals, management direction, and standards and guidelines.

RELATIONSHIP BETWEEN SHORT-TERM USE AND LONG TERM PRODUCTIVITY

Long-term productivity refers to the capability of the forest to provide resources in the future.

Land used and maintained for roads would no longer produce vegetation. Roads left open and not revegetated after use would provide future access for resource management. Roads closed can be reclaimed and returned to near-preconstruction conditions.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

An irreversible commitment of resources refers to the loss of production or use of a resource due to a land use decision that, once executed, cannot be changed. An irretrievable commitment of resources refers to losses of production or use of renewable resources for a period of time.

Minor amounts of soil loss and displacement would occur as a result of any action alternatives.

Roads left in place and in a useable condition for future vehicle access needs would remove about two acres per mile of vegetation from production (that is; trees would not be regenerated and grown on these acres). However, roads can be reclaimed to near-preconstruction conditions.

Both alternative well site locations would commit a small portion of an area without roads to development of roads and the well pad. The values of this area would be lost and not recovered unless the roads were reclaimed and returned to near-preconstruction conditions and the area is once again roadless. In addition, the roadless resource would be lost in the area surrounding the road and drill pad.

CHAPTER 1 - INTRODUCTION

CHAPTER 1 – INTRODUCTION

An Application for Permit to Drill (APD) was submitted by Chevron U.S.A. Production Company (Chevron), a division of Chevron U.S.A. Inc. to the Bureau of Land Management, Salt Lake District, on June 12, 1992, to exercise lease rights and drill an exploratory oil and gas well on the Evanston Ranger District of the Wasatch–Cache National Forest. The proposed well would be located within the main fork of the Stillwater drainage in T1N R10E SW1/4 SW1/4 Section 16, Summit County, Utah (refer to Figures 1–1 and 1–2).

The proposed exploratory well would be drilled on Federal oil and gas lease U–24446 to determine if oil and gas reserves occur in geologic formations underlying the lease, and if so, whether or not they are economically recoverable.

Chevron's proposed action includes:

- drilling, completing, and testing, and possible production at, a single exploratory oil well on 3.43 acres in T1N R10E SW1/4 SW1/4 Section 16 (Alternative Well Site A)
- restoring 0.8 mile of Stillwater Road (Forest Road No. 057), improving 2.1 miles of Peninsula Road (Forest Road No. 306), relocating 2.0 miles of the Main Fork Road, and constructing 0.8 mile of new road to the proposed well site
- constructing a .5–acre gravel source pit in T1N R10E NE1/4 NE1/4 Section 8 (Alternative Gravel Site C)to provide gravel to surface the existing and new road and well pad
- graveling 5.7 miles of the road into the well site and the 3.43–acre well pad
- drilling a temporary water well on the well pad to provide water for drilling and dust control
- reclaiming all surface disturbance at the well site if the well is not successful
- hauling potable water by truck from Evanston
- constructing a water pipeline to the location (if needed)

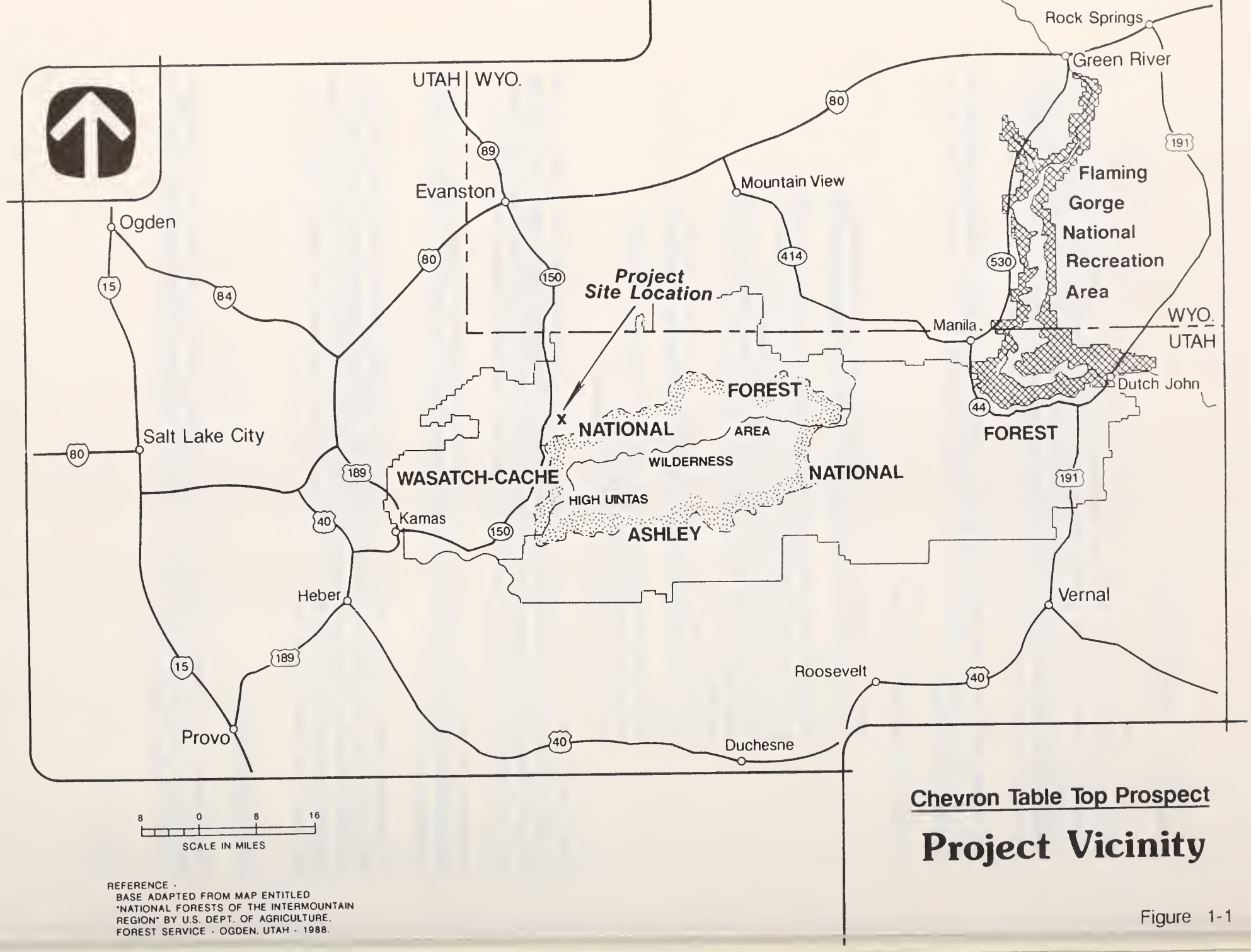
The Forest Service, as the surface management agency, in cooperation with the Bureau of Land Management (BLM), who is responsible for the management of the Federal mineral estate, have identified the need to prepare an environmental impact statement (EIS) to evaluate and disclose the potential impacts to the environment that could result from the proposed action and identified alternatives to that action.

If approved, the activities associated with the proposed action would probably begin in July or August of 1994 (depending on weather conditions). Reclamation would begin upon completion of activities depending on weather conditions.

The interdisciplinary (ID) Team writing this document has attempted to include all information necessary to understand the document, and has summarized and included references where necessary. The complexity of the analysis prevented displaying all information used. The complete project record contains additional information, and is available for pubic review at the Evanston Ranger District, Wasatch–Cache National Forest, Evanston, Wyoming.

PURPOSE AND NEED

The purpose of the proposed exploratory well is to determine whether or not economically recoverable reserves of oil and/or gas are present within the geologic formations underlying this lease and within the Table Top Federal Exploratory Unit.



REFERENCE -
BASE ADAPTED FROM MAP ENTITLED
"NATIONAL FORESTS OF THE INTERMOUNTAIN
REGION" BY U.S. DEPT. OF AGRICULTURE.
FOREST SERVICE - OGDEN, UTAH - 1988.

Chevron Table Top Prospect

Project Vicinity

Figure 1-1

During the Fall of 1987, Wolverine Exploration Company installed an exploratory drill site approximately two miles north of the presently proposed drill site. The project failed to locate economically producible hydrocarbons and the drill hole plugged. However, geological information has been gathered and produced enough promising evidence to keep the industry's interest alive in this area.

Exploration and development of Federal minerals by private companies or individuals is authorized and encouraged by the Mineral Leasing Act of 1920 and the Federal Land Management Policy Act of 1976 (FLPMA). Federal mineral leasing encourages development of domestic oil reserves in an effort to reduce the United States' (US) dependence on foreign energy sources. Chevron's proposed action is consistent with the US government's energy and land use policy.

The purpose of this analysis is to evaluate and disclose the potential environmental effects associated with the proposed action and alternatives to the proposed action. This analysis does not make a decision, but provides relevant information for public review and comment and from which the deciding officers can make informed resource decisions.

SCOPE OF THIS ANALYSIS

This analysis only addresses the proposed action of drilling an exploratory well and associated surface uses. The facilities that would be needed to produce this one well are addressed, should economically recoverable reserves of oil and gas be discovered, but full-field development is not part of the proposal and will not be addressed at this time. The proposed action involves an exploratory well and the majority of wells in this category do not result in a field discovery. Should this well result in a field discovery, an additional analysis would be completed at that time, in accordance with the National Environmental Policy Act of 1969 (NEPA), which would address full-field development.

DECISIONS TO BE MADE

The Forest Supervisor is the Forest Service official responsible for making the following decisions and ensuring that the decisions are consistent with current regulations, the Forest Plan direction, and with the rights granted by the Federal oil and gas lease; as required by 36 CFR 228.107:

- whether or not to approve the Surface Use Plan of Operations
- whether or not to authorize the use of existing Forest System roads through the issuance of a road use permit
- future management of the road to the well site (if access is by road)

The District Manager of the Salt Lake District of the BLM is the official responsible for approving the Application for Permit to Drill (APD), and any subsequent changes or modifications of the APD requested by submission of a Sundry Notice.

AUTHORIZING ACTIONS

In order to proceed, permits and approvals from other Federal, State, and local agencies may be required. A list of the permits and approvals needed to construct, operate, maintain, and abandon Chevron's proposed action are summarized in Appendix A.

BACKGROUND - THE PERMITTING PROCESS

A Federal oil and gas lease issued by the BLM, under the authority of the Mineral Leasing Act of 1920, grants the lessee the exclusive right to explore for and develop oil and gas resources on that lease, subject to terms and conditions of the lease. Prior to exercising those rights and drilling a well, the lessee or lease operator must obtain approval from the BLM. When National Forest System lands are involved, the Forest Service must approve the Surface Use Plan of Operations under authority of the Federal Onshore Oil and Gas Leasing Reform Act of 1987 (Reform Act). The process of this permitting procedure is identified in 36 CFR 228.106-108 and Onshore Order Nos. 1 and 2.

The operator is required to submit an APD to the BLM, and a copy is forwarded to the Forest Service. The APD consists of two major parts: 1) the Surface Use Plan of Operation (SUPO), which describes the surface uses and disturbances associated with the proposal, and 2) the Drilling Plan, which describes the technical drilling aspects of the proposal. The BLM has the approval authority for the APD. The Forest Service, in coordination with the BLM, has approval authority for the SUPO.

For operations on National Forest System lands, the Forest Service is the lead agency for conducting the NEPA analysis for the proposal based on a National Memorandum of Understanding dated November, 1991, between the Forest Service and BLM. Conducting this analysis includes public involvement, coordination with the US Fish and Wildlife Service (FWS) concerning potential effects on threatened or endangered species (Endangered Species Act), and coordination with the State Historical Preservation Officer (SHPO) concerning cultural or historic sites (National Historical Preservation Act). Coordination with other agencies also may be needed depending on the resources involved or within the area of the proposal.

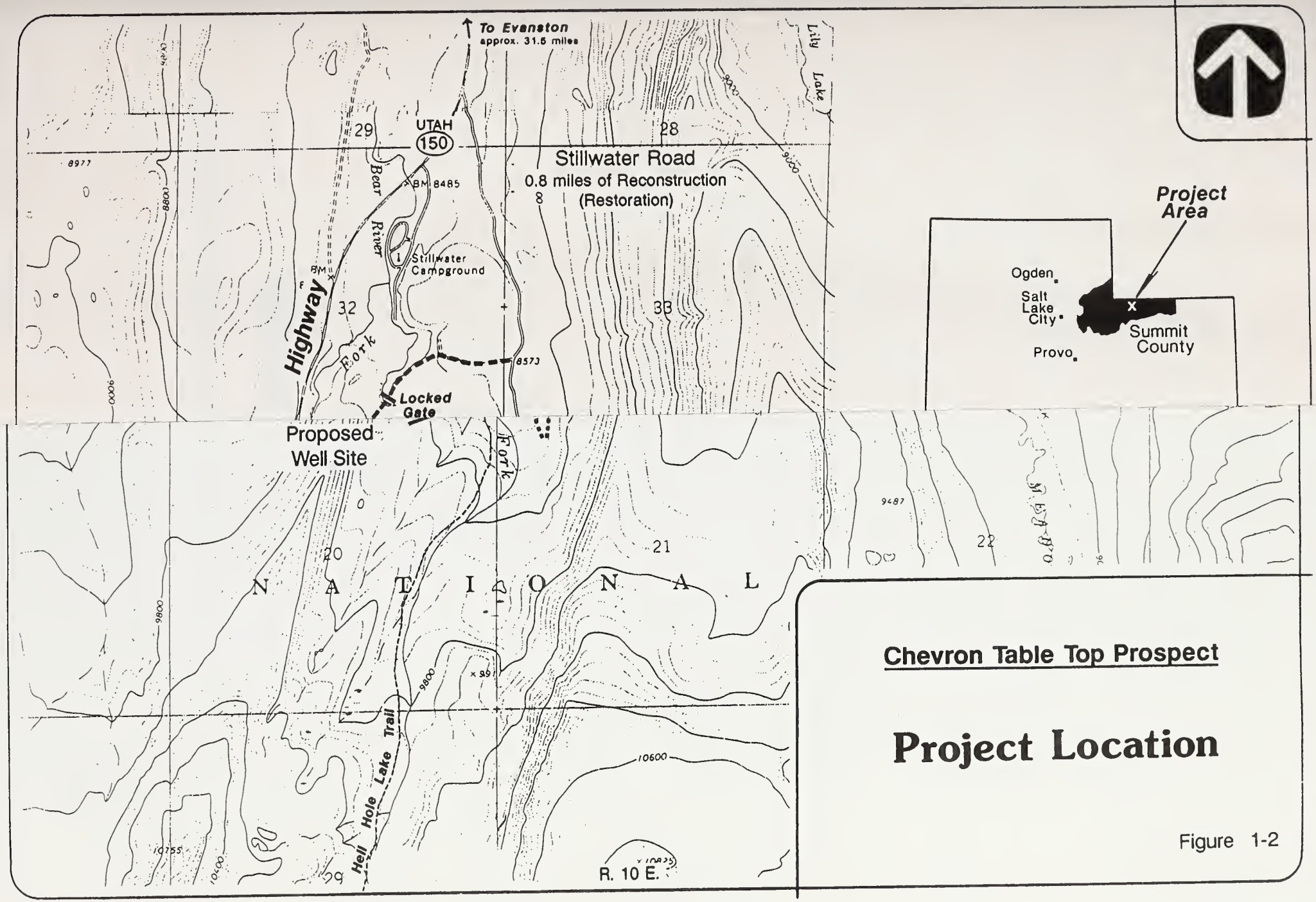
Through the analysis process mentioned above, the potential effects of the proposed action and alternatives to the proposed action are considered and mitigation measures identified. The mitigation measures that are deemed necessary to minimize effects on other resources then are incorporated into the APD as Conditions of Approval.

Once the Forest Service has made a decision with regard to the SUPO, that decision is sent to the BLM and incorporated into their decision of whether or not to approve the APD, and with what conditions.

RELATION TO FOREST PLAN

The Forest Plan, approved in September of 1985, guides all natural resource management activities and establishes long-term management standards and guidelines for the Forest. The Forest Plan describes resource management practices, levels of resource production and management, and the availability and suitability of lands for resource management. Generally, the Forest Plan provides for coordinated multiple-use management of timber, range, wildlife, watershed, developed and dispersed outdoor recreation, minerals, and wilderness resulting in sustained yields of goods and services. It is important to note that no site-specific or project-specific decisions are made in or by the Forest Plan.

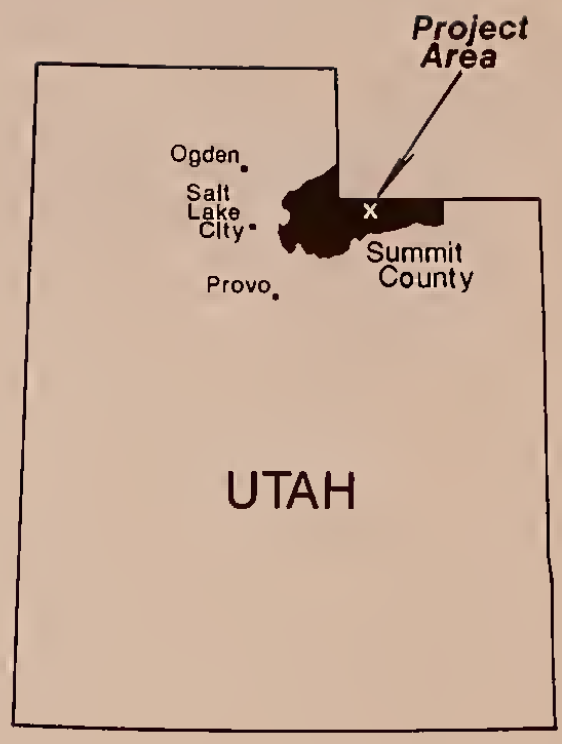
This analysis is tiered to the EIS completed for the Wasatch-Cache Land and Resource Management Plan (Forest Plan). The leases addressed in this EIS were issued prior to the development of the Forest Plan and Forest Plan standards and guidelines would be applied to the extent that lease rights are not violated.



Chevron Table Top Prospect

Project Location

Figure 1-2



To Evanston
approx. 31.5 miles

UTAH 150

Stillwater Road
0.8 miles of Reconstruction
(Restoration)

Bear River

Stillwater Campground

Highway

Locked Gate

Pennlnsula Road
2.1 miles Reconstruction
(Betterment)

Hayden Fork

Lake

Stillwater

Fork

Road

End of Existing Road

Jeep Trail

Main Fork Road
2.4 miles Primitive
(Obliterate and Revegetate)

Gold Mirror Road

Hayden Fork Campground

To Kamas
approx. 43.0 miles

Main Fork Road
2.0 miles Reconstruction
(Relocation)
0.8 miles Construction

Pack Mtn. Trail

Proposed Well Site

Hell Hole Lake Trail

Christmas Meadows Summer Home Area

Christmas Meadows Campground

CHRISTMAS PACK MTN.

T. 2 N.
T. 1 N.
R. 10 E.

1000 0 1000 2000
SCALE IN FEET

SOURCE:
U.S.G.S. 7.5 MINUTE QUADRANGLES ENTITLED "DEADMAN MOUNTAIN, UTAH - WYOMING" AND "CHRISTMAS MEADOWS, UTAH". BOTH SHEETS DATED 1972.

Chevron Table Top Prospect

Project Location

Figure 1-2

CHAPTER 2 - ALTERNATIVES INCLUDING THE PROPOSED ACTION

CHAPTER 2 – ALTERNATIVES INCLUDING THE PROPOSED ACTION

Chapter 2 provides a description of the public involvement and issue identification process, conditions common among the action alternatives, the alternatives considered but eliminated from detailed study, and alternatives considered in detail, and provides a summary comparison of those alternatives studied.

Mitigation is incorporated into the design of the project as described in sections Drilling Practices, Conditions Common To All Alternatives in this Chapter, in Chapter 4 specific to each resource area, and in Appendicies C, D, and E.

ANALYSIS PROCESS

Scoping

Integral to and initiating the environmental analysis process is the solicitation of comments from the various Federal, State, County, and local agencies, and interested organizations and individuals to assist in incorporating the most accurate and current environmental information and public opinion into planning and decision-making. The initial opportunity to comment on the project was "scoping" – an information-gathering process open to the public early in the process.

In early September, 1991, the Forest mailed a scoping document, in the form of a newsletter, to the 227 parties on the project mailing list. On September 17, 1991, a Notice of Intent to conduct environmental analysis was published in the Federal Register. The scoping period ended in early October, 1991.

A total of 116 commentors responded to the solicitation. The comments received were reviewed and summarized, and assisted in identifying the range, or scope, of issues and concerns to be addressed during the environmental studies in preparation of the environmental document. The comments ranged from full support of the project to strong opposition. Issues identified from the comments are listed below.

Issue 1 – The effects of drilling and production of the oil well on local and state economies Concerns were expressed regarding the effects of this project and potential subsequent oil projects (primarily production), to local, State, and Federal economies. Development would provide economic benefits; from tax revenues, jobs, goods and services; for the affected State and local economies, as well as the Federal government. Such benefits would alleviate tax burdens and provide needed funds for the affected communities. Also, the increase in domestic production of energy resources would reduce the United States' dependence on foreign energy resources.

Other concerns were expressed that the potential economic benefits would be negligible compared to the potential effects to the natural resource values of the area.

Issue 2 – The effects of drilling and production of the oil well on the values and characteristics of the roadless area Concerns were expressed regarding the potential impacts to the roadless area. Some individuals believe that new roads in the area would result in increased human intrusion and cause irreparable change to the roadless area. They believe that the values of solitude provided by the area are unique and should not be affected.

Issue 3 – The effects of drilling and production of the oil well on wildlife species and habitat Concerns were expressed regarding the potential effects to the wildlife and habitat of the area, which is presently undiminished.

Issue 4 – The effects of drilling and production of the oil well on existing recreation uses in the area Concerns were expressed that the effects of the project would alter the recreational setting and experience presently provided by the area. Roads introduced into the area would provide access for vehicles and promote increased human activity. Recreationists favoring rustic, dispersed recreation opportunities believe that the uses of recreation and the drilling and

production of the oil well are incompatible and oppose development in this area. Expressed in relation to this concern, were the effects of this project on other resources such as wildlife, habitat, water, etc. (which are included in discussions of other issues).

Other recreationists favor the opportunity for increased access into these areas – leaving roads open to the public, reclaiming the well site upon completion of project activities, and developing recreation sites such as trailheads.

Issue 5 – The effects of drilling and production of the oil well on road management in the future As mentioned previously, some individuals expressed concern that roads introduced in the area would provide access for vehicles and promote increased human activity – resulting in both direct and indirect impacts to the area.

Other recreationists favor the opportunity for increased access into these areas – leaving roads open to the public.

Issue 6 – The effects of drilling and production of the oil well on water quality in the Stillwater drainage Concerns were expressed that ground-disturbing activities associated with the project (construction, drilling, and production) would disturb soils and could cause consequent effects on soils and water. Potential effects to soils include compaction, displacement, and loss of vegetation cover resulting in erosion. Soil-disturbing activities such as construction and vehicular traffic, could result in erosion or other displacement of soils (for example, at stream crossings) may cause sedimentation in streams with consequent degradation of water quality and aquatic habitat (for example, fisheries).

Other effects to water quality could result in contamination of ground and surface water from possible fuel and/or oil spills.

Issue 7 – The effects of drilling and production of the oil well on the aesthetic and visual characteristics of the area Concerns were expressed regarding the effects of project activities on the natural beauty of the area, particularly from the Mirror Lake Highway. Some comments addressed the temporary nature of the activities that are considered most obtrusive to the character of the area (that is, primarily drilling).

Issue 8 – The effects of drilling and production of the oil well on the water supply to the Christmas Meadows summer-home area Concerns were expressed regarding the potential effects of project activities on the quantity of nearby spring water used for domestic use by the residents of the Christmas Meadows summer-home area.

Other comments received were not identified as significant issues to be analyzed. Some of the comments will be addressed in this EIS as management requirements that must be followed by Chevron. Other comments were beyond the scope of this analysis (for example, full-field development).

Following review and analysis of the comments received, project personnel from the Forest met on October 31, 1991, to discuss the issues and determine the type of documentation needed. Public comments demonstrated a wide range of concern over effects of introducing a road into a roadless area. Some individuals believe a road should be introduced for improved accessibility and other individuals believe that accessibility should not be improved. The controversy over the effects led to an agreement and decision to prepare an environmental impact statement (EIS) rather than an environmental assessment. A Notice of Intent to prepare an EIS was published in the Federal Register on January 8, 1992. Public comments were accepted until January 31, 1992. These comments plus comments received during the scoping period were used in directing the preparation of the EIS.

Upon completion of the draft EIS (DEIS), the DEIS was released for public review and comment on the adequacy of the document. During the review period, which ended February 19, 1993, the Forest conducted public meetings to receive comments. At the end of the review period, the written and oral comments were reviewed, summarized, and evaluated. The comments and responses to those comments are included as Chapter 9 in the final EIS.

CONDITIONS COMMON AMONG ACTION ALTERNATIVES

Many conditions would be common among the action alternatives and would be or have been incorporated into the project design. These conditions are summarized below. More site-specific information is provided in the discussions of the alternatives.

Full implementation of Chevron's proposed action would require completion of many steps. Once BLM, in coordination with the Forest, has approved Chevron's APD, construction could begin. Road work would include restoration of 0.8 mile of Stillwater Road, improvement of 2.1 miles of Peninsula Road, relocation of 2.0 miles of the Main Fork Road, construction of 0.8 mile new road to connect the existing road to the well site. The well pad would be constructed, and the well drilled and tested. If the tests are negative, the exploratory well would be plugged and abandoned and the entire well pad and disturbance associated with the well pad would be reclaimed. However, if the tests are positive, the well would be prepared for production and a portion of the well pad, not needed for production, would be reclaimed. Additional work in the Table Top Unit (including drilling additional wells and subsequent development of wells) would occur only after additional environmental analysis has been completed. By approving the drilling of this exploratory oil well, no commitments for future development in the Unit would be made by the Forest or BLM.

Schedule

For all action alternatives, regardless of which alternative is selected, the schedule for construction, drilling and testing, and production would remain the same. The schedule is shown on Figure 2-1. Construction and drilling would begin in July or August of 1994 (depending on weather, low flow of the Main Fork). Reclamation of the well-pad area not needed for production would proceed upon Forest Service approval.

If the well is successful, production would begin following completion of drilling and installation of production equipment.

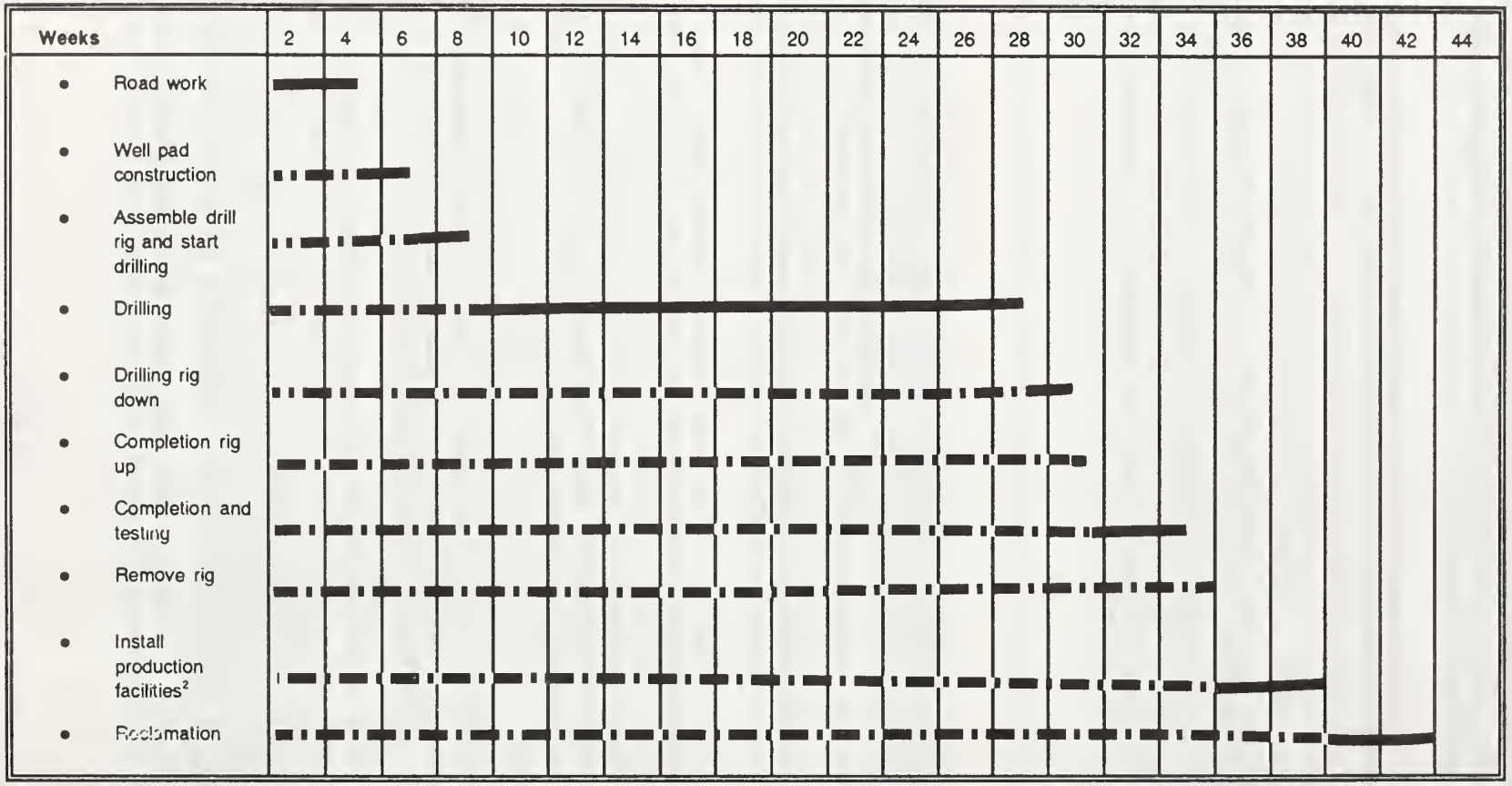
Workforce and Transportation

The proposed route to the project area would proceed from Evanston, Wyoming, south on the Mirror Lake Highway (Highway 150) approximately 33 miles to the intersection of the Mirror Lake Highway and Stillwater Road (Forest Road No. 057) in Summit County, Utah.

Winter use of the Mirror Lake Highway has been negotiated with the Utah Division of Parks and Recreation, which manages the section of highway for snowmobile use when the Utah Department of Transportation closes it due to snow cover. Conditions that were negotiated follow (also refer to letters, dated April 4, 1992; March 18, 1992; and January 13, 1992; provided in Appendix F):

- The gate at the Bear River service station would remain in its present location.
- After winter closure of the gate, only Chevron, Utah Parks and Recreation, and Agency personnel would be allowed access.
- Only one half of the road would be cleared of snow. The other half would be groomed and maintained as a snowmobile trail.
- Caution signs ("Heavy Truck Traffic") would be placed at the gate at the Bear River service station and along the road.
- The gateway at the Bear River service station would remain clear of vehicles and equipment at all times so that the snowcat operated by Utah Parks and Recreation can reach the station for fuel.

FIGURE 2-1
SCHEDULE[1]
Table Top Prospect Project



[1]Weather and/or seasonal restrictions may affect schedule.
[2]Production facilities would be installed if commercial quantities of hydrocarbons are found.

- Weekend and holiday use of the road would be scheduled for early morning and/or later in the evening to avoid the recreational traffic during the day.
- In emergency situations, vehicles that need to be on the highway during peak use by snowmobilers would be equipped with warning lights and/or other devices capable of alerting snowmobilers of their approach.

Construction and drill crews, and material and equipment would be transported over the Mirror Lake Highway and the road proposed to the well site. Chevron would comply with all existing Federal and State regulations and restrictions established to protect road networks, the travelling public, and adjacent landowners and their property. Special arrangements would be made with the appropriate highway departments as required to transport oversize, overlength, and overweight loads. Otherwise, all load limits would be observed at all times to prevent damage to road surfaces. Chevron would be responsible for maintaining the proposed road to the well site.

Peak levels of traffic would be associated with transporting equipment and materials at the beginning of construction of the well pad and assembling the drill rig. Up to 15 loads daily for about four weeks would be required to transport equipment and material to the well site. After construction and assembling the rig, the majority of daily traffic would be pick-up trucks and cars. Equipment and vehicles for all phases of the project are shown on Table 2-1.

Clearing and construction of road and the well pad would involve 10 to 35 workers for a period of about three weeks. From 15 to 20 workers would be needed for rig assembly. Routine drilling operations would require 11 to 15 workers. Casing and cementing operations would require 29 or 30 workers. Removal of the rig would require 15 to 20 workers. Well completion would require 7 to 12 workers. Installation of facilities for production would require 5 to 15 workers. Reclamation would require 5 to 10 workers. Normal production for the single well would require 1 worker.

TABLE 2-1
EQUIPMENT AND PERSONNEL

Type of Vehicle	Number	Number of Personnel
Road Work and Site Construction		10 to 35
D6 to D9 caterpillars	5	
Road graders	2	
Scrapers	3	
Compactor	1	
75- to 100-ton crane	1	
Dump trucks	4	
Front-end loaders	2	
Rock crusher/screen	1	
Log skidder	2	
Log loader	1	
Log hauler	3 (daily)	
Pickup trucks/cars	8 (daily)	
Fuel trucks	2	
Rig Assembly		15 to 20
Multi-axle heavy trucks	10	
Light trucks (1/2 - 3/4 ton)	2	
Medium trucks (one ton)	6	
50- to 100-ton crane	1	

Table 2-1 (continued)

Type of Vehicle	Number	Number of Personnel
Drilling		
Routine Operations		11 to 15
Multi-axle heavy trucks	1 or 2 (3-4 per week)	
Medium trucks (one ton)	3 or 4 (4-5 per week)	
Light trucks (1/2 - 3/4 ton)	10	
Casing Cementing Operations		29 to 30
Multi-axle heavy trucks	7	
Medium trucks (one ton)	2	
Light trucks (1/2 - 3/4 ton)	10	
Rig Removal		15 to 20
Multi-axle heavy trucks	10	
Medium trucks (one ton)	2	
Light trucks (1/2-3/4 ton)	6	
50- to 100-ton crane	1	
Well Completion		7 to 12
Multi-axle heavy trucks	2 to 4	
Medium trucks (one ton)	3 to 5	
Light trucks (1/2-3/4 ton)	5	
Facilities Installation		5 to 15
Back hoe	1	
Heavy trucks	3	
Welder trucks	3	
Pickup trucks/cars	3 (daily)	
Reclamation		5 to 10
Track hoe	1	
D6 to D9 caterpillars	2	
Scrapers	2	
Dump truck	1	
Back hoe	1	
Pickup trucks/cars	3 (daily)	
Production (single well)		
Normal Operations		1
Pickup truck	1 (daily)	
Oil transport truck	2 (daily)	2
Road Maintenance		1 to 3
Road grader	1	
Dump trucks	1	
Water trucks	1	
Snow blower	1	
Front end loader	1	

Note: The listing in this Table is an attempt to identify a majority of the equipment that will be used during the project, but due to unforeseen circumstances it may not be all inclusive.

Road Upgrade and Construction

Prior to commencing work on the dirt road into the well site, Chevron would submit a set of road construction plans for Forest review and approval. The plans would incorporate criteria developed by the Forest, which have been provided to Chevron (refer to Appendix C). After approval of the road-construction plans, the road would be staked in accordance with the plan. Staking consists of determining finished site elevation, cut and fill slopes and catch points, drainage, balanced earthwork, and other construction needs. Staking would be approved by the Forest prior to any ground-disturbing activities. The road work would require approximately three weeks and would begin with clearing vegetation along the sides of the existing road and along the alignment of the relocated and new road. Merchantable timber removed during clearing would be purchased by Chevron and hauled off of the Forest. Stumps and timber slash would be piled in pre-approved pits, burned, and then buried. Slash may be used in approved locations to trap sediment.

The road would then be graded to a travel surface of 14 feet except where the turnout areas and several curves would require widening. Eighteen-inch culverts would be used for road drainage and 24-four inch culverts would be used for "through-ditch" drainage (cross drainage, canyons). Gravel from the local gravel source would provide an approximate 4-inch-thick cap of 2-inch or less evenly crushed or screened native material for the surface of the road to minimize erosion.

Well Site

Construction of the well pad would require approximately two weeks. Activities would include clearing the site of all trees and vegetation, grading the site, and construction of the well pad. The size of the well pad has been designed to the minimum size needed to safely drill the exploratory well.

A reserve pit would be constructed on the well pad to store formation cuttings brought to the surface from drilling, drilling fluids, and drill-rig wash. The reserve pit would be lined with an impermeable synthetic liner to isolate fluids in the pit from shallow ground water. During drilling the reserve pit would be fenced on the three nonworking sides for safety and to deter wildlife from entering the reserve pit.

Fuel would have to be stored onsite (in a storage tank on the well pad) for equipment operation. The fuel tank would be surrounded by earthen berms (primary containment) and the area lined to contain the capacity of the tanks in order to isolate any possible inadvertent spills.

The area of the well pad where the drill rig and support equipment are located is level and surrounded by a ditch. Fluids spilled or from precipitation on this level area would drain into the ditch and would be diverted to the reserve pit. In order for the contents of the reserve pit to maintain an exempt status under the Resource Conservation and Recovery Act (RCRA), only non-hazardous fluids will be allowed. Test of the pit contents, however, will still be conducted in order to prescribe proper disposal methods. The area of the well pad outside of the level area is gently sloped so surface runoff would drain toward the sediment basin drain ditches. Tests for hazardous substances would be conducted of the fluids in these basins if the need arises.

The slash produced from clearing the well pad site could be placed around the toe of the fill slopes to reduce erosion. If needed, a sediment filter belt or erosion-control blanket would be constructed.

A drainage ditch would be constructed above the pad and around the topsoil stockpiles to direct surface runoff away from the pad and stockpiles. This will help control erosion of the topsoil and keep additional water from entering the reserve pit (refer to Appendix E also).

No trash or other materials would be allowed in the reserve pit or other containment areas. Portable metal trash receptacles would be provided at the site and periodically hauled to the Evanston landfill. Burning of trash would be prohibited. Portable chemical toilets would be provided onsite. Sewage would be disposed of in a 1,000-gallon fiberglass insulated holding tank, which is to be placed in the vicinity of the trailers on the well pad. Arrangements would be made for the sewage to be transported from the well site to an approved facility in the area.

Drilling and Completion Drilling and completion of the exploratory oil well would require several stages including:

- assembling equipment
- assembling crew
- drilling
- casing
- cementing
- perforating
- stimulation
- installation of the packer and tubing string

Once the well pad has been constructed, the drilling rig would be hauled by truck to the site. The drilling rig would be approximately 28 feet by 50 feet at the base and 138 feet in height. Power for the rig would be supplied by diesel engines, the fuel for which would be hauled to the site by truck and temporarily stored in fuel-storage tanks on the well pad.

Generator-powered lights would be used for the safety of the workers, especially during dark hours. The Standard Occupational Safety Health Act and Federal Aviation Administration rules require white lights on the floor of the rig and red lights on the derrick. The remainder of the tower lights would have a half-shield over fluorescent globes to direct the lighting to the lower working areas.

Earthen berms would be constructed around the fuel tanks to serve as containment in the unlikely event of a spill. Also, Chevron has prepared a spill prevention control and countermeasure (SPCC) plan as part of the APD, addressing emergency procedures in the event of a spill (refer to Appendix B).

Chevron first would drill through the formations that could contain fresh water aquifers (known as the surface hole), install casing in the hole, and cement it from the bottom to surface. This surface casing protects shallow aquifers, prevents washout of surface formations during drilling, and provides support for the casinghead and casing strings. Once the hole has been drilled to the target depth, the hole would be cleaned to remove any cuttings left in the hole after drilling. Then the well would be logged. Casing would be installed from the bottom of the hole to the surface. Selection of the proper casing weight involves estimating the forces that would be applied to the casing and selecting a suitable grade to withstand the forces. Chevron would use standard API well-casing techniques to ensure that the casing can safely withstand the forces of tension, collapse, and burst. Casing pipe would be purchased in 35- to 45-foot lengths and transported by truck to the site. The casing would be stored on pipe racks until each piece is needed. Casing would be set in the hole one piece at a time and would have threaded fittings.

Development for Oil If the well is determined to be an oil producer, several steps would be taken to complete or develop the well including: install and cement casing; perforate casing; install production tubing; install well heads (an assembly of valves and gauges known as a "Christmas Tree") to control the rate of flow on flowing wells, or install a pumping unit in a nonflowing well to lift oil to the surface; erect a battery of tanks for storage; install a separator to separate associated gas from the oil; install a flare pit to burn gases. The oil would be removed from the tanks and hauled by truck to Evanston. Disposal of

produced water requires prior approval pursuant to Onshore Order #7. The volume of oil produced each day cannot be estimated at this time. However, by way of example, if 600 to 650 barrels were produced per day, the battery of tanks could include three 400-barrel tanks for oil and one 400-barrel tank for produced water, and two trucks (each capable of a 400-barrel payload) would transport the oil to Evanston each day. Associated gas would be flared according to agency requirements, (requires prior approval pursuant to Notice to Lessees - 4-A). Gas in commercial quantities will be collected and sold.

If commercial quantities of hydrocarbons are found, any additional drilling in other areas of the lease would be subject to further environmental analysis and public review, and is not addressed in this EIS.

Reclamation (if oil well is productive) Following the drilling operation, the reserve pit is no longer needed. Any oil would be retained in tankage until sold, then removed from the tanks and hauled by truck. Any water produced would be retained until its quality is determined. The quality and quantity of water produced would then determine the disposal procedure. If injection is not approved, fluids will have to be hauled off Forest to an approved disposal site. The cuttings would be left in the pit to dry. The reserve pit would be fenced on all four sides until the pit can be closed and reclaimed. Also, the pit would be flagged or netted. When the reserve pit is dry, all exposed lining will be hauled to an approved disposal site. The pit would be backfilled and reclaimed.

The portion of the well pad that would not be needed for production of the well would be reclaimed. Reclamation also would involve reducing the slope and seeding the disturbed areas (refer to Appendix E). It may be necessary to install silt barriers at selected locations to control off-site sedimentation until vegetation is reestablished. Long-term monitoring would be required by the Forest to ensure that revegetation is successful and erosion from disturbed areas is controlled.

Reclamation (if oil well is not productive) If commercial quantities of hydrocarbons are not produced, the entire well pad would be reclaimed to stabilize slopes and minimize erosion. The reserve pit would be reclaimed as described above except for disposal of the drilling fluids. As much of the drilling fluids as possible would be injected into deep formations (with BLM approval) prior to plugging and abandonment. The entire well pad would be graded to reduce the slope and seeded. As mentioned above, long-term monitoring would be required by the Forest to ensure that revegetation is successful and erosion from disturbed areas is controlled.

Drilling Practices and Policies

Chevron maintains certain programs and polices designed to protect the environment and the health and safety of personnel.

Environmental Training Program Chevron has agreed to maintain an environmental training program for all personnel (Chevron employees and contractors) involved in the project. The training program includes established guidelines for personnel conduct and goals to reduce unnecessary impacts to the environment. The program clearly states that failure to comply with the objectives of the program or Chevron's policies could result in dismissal.

Restriction of Off-Site Activities All personnel would be restricted to the work site(s). Driving off of designated roads would be prohibited. Off-road vehicle use would comply strictly with the Forest Service Travel Plan. Only authorized Chevron personnel would have access to combinations or keys to the locked gate. Travel on the existing open Forest roads to and from the well site would be strictly controlled.

Maintain Vehicle Speeds Vehicle speed on Forest Roads would be controlled at all times. Because of

dust, the potential for animal-vehicle collisions, and for general public safety, vehicle speed would be strictly enforced. Failure to comply with the speed limits could result in employee dismissal.

Dust Control Dust would be controlled by wetting the sources of dust as necessary.

Signing Signs would be placed at appropriate locations, as determined by the Forest, to advise the public of the construction area. The locked gate would exhibit a sign notifying workers and the general public that the area is closed to all but authorized traffic.

Poaching and Littering Policies Chevron has policies in place to control poaching and littering. Prior to construction, all personnel would be notified that conviction of a major game violation would result in employee dismissal. Contractors would be informed that any intentional littering on or off the site could result in a release.

Guns and Dogs Guns and dogs would not be allowed in any project-related area.

Drugs, Alcohol, and Firearms Chevron's drug, alcohol, and firearms policy applies to the activities of the proposed project. Major contractors must maintain a safety program that includes the prohibition of drugs, alcohol, and firearms.

Safety On a drilling operation Chevron uses equipment and practices designed to minimize the risk of a safety or environmental incident. Some of these include:

- All Chevron drilling representatives are certified in well control.
- Mechanical blowout prevention (BOP) equipment designed to contain the well if unexpected pressures are encountered. The BOP equipment has redundant backup systems to ensure closure and proper control of the well in even the most severe situations. This equipment is operated and visually inspected daily to ensure good working order. It is also pressure tested every 21 days or sooner to verify integrity of the system.
- Weekly practice drills of all crews in proper well-control methods should it be necessary to contain the well.
- Automatic monitoring equipment for early detection of a gas influx.
- All electric motors, lighting, and wiring meets explosion proof requirements.
- All mud chemicals and additives are stored in enclosed trailers and/or plastic shrink wrapped to protect them from mishandling and weather.
- Impermeable synthetic lining in the reserve and working pits is used to protect groundwater and surface waters from contamination.
- Surface casing is used to protect groundwater and surface waters from contamination.

Chevron also maintains documentation and contingency plans in accordance with State and Federal requirements, such as:

- Spill Prevention Control and Countermeasure (SPCC) Plan
- Hydrogen sulfide contingency plans
- Waste management logs to document the volumes, use, and method of disposal of all oil field chemicals, solid waste, and effluent that are brought to and removed from the location for disposal.
- Daily and weekly inventories of all drilling fluid chemicals kept in storage and used on location.

It is unlikely that H_2S will be encountered but approval of the APD is contingent upon Chevron's compliance with Onshore Oil and Gas Order No. 6, which sets requirements for safety equipment and materials that must be used at locations where H_2S may be encountered. Implementation of a contingency plan is designed to protect workers and the public from the effects of an accidental release. The primary purpose of this contingency plan is to guide location personnel in the responses expected of them in the event that

H_2S is encountered during drilling. Safety and accident-prevention equipment would limit public exposure to hazardous gases should they accidentally be released from the well.

In the unlikely event of a serious release of H_2S, the gas from the well would be ignited at the flare pit. Once burned, H_2S would be converted to a less toxic sulfur dioxide. Everyone within a two-mile radius of the well site would be evacuated immediately by the Forest Service and Chevron (without waiting for assistance from local emergency assistance agencies).

ALTERNATIVES IDENTIFIED

The alternatives considered for this project include:

- no action
- three alternative well sites
- three road-location alternatives
- three road-management alternatives
- alternative means of transportation (helicopter)
- four alternative gravel sources
- alternative means of procuring water
- crew camp site

Some of the alternatives were considered, but for various reasons were eliminated from detailed analysis. Others of these alternatives were considered in detail. Refer to Figure 2-2 at the end of this Chapter.

ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED STUDY

Well Site

During scoping, an individual suggested that an alternative be considered that would locate the well in another section in this same area, but that has existing heavily used roads. A specific location was not identified. Well sites are located based upon the presence of appropriate geologic structure. Moving the drill site outside of the roadless area where there is existing access would greatly increase the risk of a non-productive well (entering the target zone on the flank of the geologic structure and below the oil/water contact), and would likely require the drilling of additional wells to evaluate the potential of the structure.

Placing the well site outside of the roadless area near existing access would require a move of at least one mile from the proposed site (based on a roadless area map provided with one of the comment letters). Directional drilling from that distance is on the outer fringe of technical feasibility, especially in an area where the geology factors (dip-angle of faults, fracture patterns within formations, formation competency, swelling characteristics of clays, etc.) are not well know. The increased cost of directional drilling along with the extreme risk of being able to technically complete the hole, make this option not viable.

Also moving the well to such a location would require moving off of the lease where the proposed well is located. Although a `Unit' has been formed, doing so does not negate the rights of that lease and could be considered a denial of access to the lease, which does not preclude all surface occupancy. For these reasons an alternative well site outside of the roadless area was eliminated from detailed study in the EIS.

Road Alternatives

Hayden Fork Road Alternative An alternative route location was considered that would begin at the Mirror Lake Highway, in T1N R10W NW 1/4 NW 1/4 of Section 8 (refer to Figure 2-2). This route would result in reconstructing an existing primitive road crossing the Hayden Fork, thus requiring two bridges or one bridge with a very long span and an approximate five-foot depth of fill material for approximately 1,400 feet to fill bogs and wet areas. At this crossing, the route would disrupt approximately 1.25 acres of wetlands and riparian areas on either side of the stream. The road construction and bridge(s) would create impact on the visual characteristics of the area as it is seen from the Mirror Lake Highway. The bridge(s) and fill would be very expensive. For these reasons, this alternative was eliminated from further consideration.

AMOCO Road Alternative An alternative location for the proposed new portion of the road (at the beginning of Peninsula Road) to the well site was considered. In 1985, AMOCO Production Company (AMOCO) considered developing a well in the SE 1/4 NE 1/4 of Section 21. The road route would cross the Main Fork immediately and climb to the east, switch back to the west, and proceed on the bench on the east side of the Main Fork Bear River. For the presently proposed project, the route would proceed along the bench into Section 16 (to Alternative Well Site A). The objective of this road was to avoid the Howe Flume Historic District. The affects of this alternative road location, addressed in the environmental assessment for the AMOCO Proposed Oil and Gas Exploration Drill Site and Access Road, Stillwater Fork Unit Area, would have resulted in the removal of approximately 11.0 acres of lodgepole pine and existing ground cover would be completely removed within the new road alignment to reach Alternative Well Site A. This alignment would traverse side slopes in excess of 50 percent. The road bed would be constructed on a full bench cut with all material pushed over the side slopes. Because of steepness the fill would not catch soon enough to provide stability for the road bed to be on partial fill, thus much more disruption to vegetation would occur. The steep side slope makes it impractical to avoid the bogs and wetlands. Also, this road would be closer to the Christmas Meadows summer home area (.5 mile at one point). With careful planning and with appropriate mitigative action, approved in conjunction with the Forest and the Utah State Historic Preservation Office (SHPO), a road through the Howe Flume Historic District could be used with no adverse effect to the District.

Helicopter Access Helicopter access would require the construction of a three to four acre staging area adjacent to an existing road for unloading and loading trucks, for refueling and landing the helicopter. Due to the size of helicopter needed (typically a Boeing Vertol 10711 or equivalent), the noise would be heard in the Christmas Meadows Summer Home area, in several developed campgrounds, and in that portion of the Wilderness in the Hell Hole area. The cost of such an operation would be very high and would require bringing a drill rig from outside of North America since there currently are none here that can be broken down to helicopter transportable loads and are capable of drilling to the target depth.

Chevron just completed drilling an exploratory well (Hunter Creek) on the Bridger-Teton National Forest using helicopter access. The location is at an elevation 2,800 feet lower than the proposed action being analyzed here. That well was also drilled to only 7,000 feet which required a smaller drill rig. The additional 10,000 feet of depth (target depth of 17,000 feet) involved in this well requires a drill rig with a minimum additional lifting capability of 166,000 pounds or 83 tons over that needed to drill to 7,000 feet. This only considers the weight of the drill pipe (16.6 lbs/foot) and not the friction and drag associated with the increased depth.

The cost of drilling the Hunter Creek well (as per Bridger-Teton National Forest) was ten times more expensive by using helicopter access.

The additional impacts and costs were not deemed reasonable by the Forest Service, considering the

existing Forest Plan direction does not preclude road construction and prescribes managing the area for Roaded Natural (RN) recreation opportunities (Map #5, Forest Plan). For these reasons the helicopter access alternative was not carried forward in the FEIS.

Gravel Source Alternatives

Hauling Chevron considered an alternative of hauling gravel by truck from Evanston. However, suitable materials are readily available in the vicinity of the project. Use of local gravel would eliminate the costs of hauling and would not contribute to an increase (would require about 600 round trips) in industrial traffic on the Mirror Lake Highway. This alternative was eliminated from detailed analysis since hauling gravel from Evanston was considered unnecessary.

Three potential gravel sources were identified: Alternative Gravel Source A, Alternative Gravel Source B, and Alternative Gravel Source C (described as part of the proposed action below). (Refer to Figure 2-2.) Twelve test pits were excavated with a backhoe in these three sites. Each of the sites would require a crusher and/or screen onsite. A screening operation would leave a large pile of excess large rock and a large pile of fine sandy silt material. The results of the tests concluded that all three sites have potential as a gravel source. However, Alternative Gravel Source C contains more clay-type binding material and would provide more stable, longer lasting surfaces (particularly important for the road) than Alternative Gravel Sources A or B. For these reasons, Alternative Gravel Sources A and B were eliminated from further consideration.

Alternative Gravel Source A is located in the NE 1/4 SE 1/4 Section 32, near the junction of the Peninsula and Stillwater roads. The road to the site would have to upgraded and widened, and trees would have to be removed to widen the road. The site is within 1,000 feet of the Stillwater Fork. The material contains a high percentage of minute particles (fines) mostly in the form of sand. Very little clay, to use as a binder, is evident. To make gradation (proper ratio of rock to fine material) would result in a large pile of rejected sand in order to find enough rock. Alternative Gravel Source A would require removal of approximately 5,500 cubic yards of material.

Alternative Gravel Source B is located in the SW 1/4 NE 1/4 Section 5 about midway on the Peninsula Road and to the east about 500 feet. The road to the location would have to be upgraded and widened, and trees would have to be removed to widen the road. Also, trees would have to be removed in order to work the location. The site is located about 600 feet from a riparian area and 1,000 feet from the Stillwater Fork. There appears to be enough fines and rock to make gradation without large piles of rejected material. The fines are mostly in the form of sand or silt with very little clay to serve as a binder. Without a binding material, the surfacing would eventually wash off of the road. Alternative Gravel Source B would require removal of 6,800 cubic yards of material.

Crew Camp

Construction of a crew camp as near to the well site as possible was considered to minimize travel to and from the location by the crew members (refer to Figure 2.2). Because of the proximity of the project area to Evanston, use of the crew camp would be expected to be limited. Crew members most likely would prefer to reside in Evanston, which would result in economic benefits (purchase of goods and services) for the community. Construction and maintenance of such a camp would (1) be costly and (2) create impacts resulting from construction and use, and the high frequency of trips between the crew camp and well site. In the late fall and winter months when the Mirror Lake Highway is closed to through traffic (open for snowmobiles), driving to and from Evanston may require shifts different from those normally scheduled.

ALTERNATIVES CONSIDERED IN DETAIL

Proposed Action (Preferred Alternative)

The proposed action includes:

- drilling, completing, and testing, and possible production at, a single exploratory oil well on 3.43 acres in T1N R10E SW1/4 SW1/4 Section 16 (Alternative Well Site A)
- restoring 0.8 mile of Stillwater Road (Forest Road No. 057), improving 2.1 miles of Peninsula Road (Forest Road No. 306), relocating 2.0 miles of the Main Fork Road, constructing 0.8 mile of new road to the proposed well site, and reclaiming existing 4WD trail (2.4 miles)
- constructing a .5-acre gravel source pit in T1N R10E NE1/4 NE1/4 Section 8 (Alternative Gravel Site C)to provide gravel to surface the existing and new road and well pad
- graveling 5.7 miles of the road into the well site and the 3.43-acre well pad
- drilling a temporary water well on the well pad to provide water for drilling and dust control
- reclaiming all surface disturbance at the well site if the well is not successful
- hauling potable water by truck from Evanston
- constructing a water pipeline to the location (if needed)

A summary of the disturbance by acres is provided on Table 2-2.

TABLE 2-2
SUMMARY OF DISTURBANCE
(Acres)

Project Component	Alternative Well Site A	Alternative Well Site B
Road Restoration	.77	.77
Road Improvement	2.04	2.04
Road Relocation	7.27	7.27
Road Construction	2.9	9.68
Gravel Source	.5	.5
Well Site	3.43	3.5
TOTAL	16.91	23.76

Note: Road width disturbance estimated to be: eight feet for road restoration and improvement, 30 feet for road relocation and construction on slopes less than 40 percent, and 50 feet for construction on slopes over 40 percent.

Well Site (Alternative Well Site A)

Location The proposed well pad site would be located in T1N R10E SW 1/4 SW 1/4 of Section 16 (refer to Figure 2-2 at the end of this Chapter).

Construction Construction of the well pad would require about two weeks. The size of the well pad has been reduced to a minimum size needed to safely drill the exploratory oil well. Construction would disturb approximately 3.43 acres. The proposed layout for the well pad is provided in Figure 2-3 at the end of this

section. The entire well pad would be cleared of all vegetation, which is primarily lodgepole pine, to three feet beyond the top of the cut slopes and a minimum of five feet beyond the shoulder of the fill slopes or at the toe of the fill. Prior to grading, approximately the first 6 to 8 inches of topsoil would be removed and stockpiled to use in later reclamation. Approximately 3,230 cubic yards of topsoil would be removed from the surface of the well pad. The topsoil would be stockpiled adjacent to the well pad in two locations, on the northwest and south sides. After the topsoil is removed, the well pad would be graded to produce a level working surface. Cut and fill slopes would be constructed at a 1.5:1 slope. The earth work for the well pad and reserve pit would be nearly a balanced design. In total, approximately 25,150 cubic yards of soil would be cut from the well site for the pad and fill required would be 24,900 cubic yards. The remaining 250 cubic yards would be used on the road.

Facilities on the well pad are illustrated on Figure 2-4 at the end of this section.

Reserve Pit The reserve pit, 86 feet wide by 221 feet long by 23 feet deep (51,260 barrel capacity), would be constructed on the well pad to store formation cuttings brought to the surface from drilling, drilling fluids, and drilling-rig wash. The pit slopes, or sides, would be constructed at a 1:1 slope. The reserve pit would be lined with an artificial polyethylene liner (burst strength of 450 pounds per square inch (psi)) to prevent infiltration into the ground.

If the well produces, only about 1.5 acres of the well pad would be needed for production facilities, the remainder of the well pad would be reclaimed (refer to Figure 2-5 at the end of this section).

Water

Potable Water Potable water would be hauled by truck from Evanston.

Water Well Chevron proposes to drill a water source well on the northeast corner of the well pad to supply water for drilling and dust control. To mix the drilling fluids would require one or two days and use 75 gallons of water per minute over a 24-hour period. After the drilling fluids have been mixed, eight gallons of water per minute would be required. Drilling a water well would provide a reliable source of water, would be more cost effective than the other alternatives (hauling or pipeline described below), would eliminate the truck traffic resulting from hauling water, and would eliminate impacts to the stream(s) created by withdrawal of water by truck or pipeline. The well would be permitted by the Utah State Engineer.

Water Pipeline and Hauling If the water well does not supply sufficient amounts of water, Chevron would construct a water pipeline to transport water obtained from the Main Fork to the well site or haul water by truck from the bridge crossings on the Stillwater and the Main Fork to the site for storage in 400-barrel portable tanks. Water would be withdrawn during summer, fall, and winter months. The Main Fork flows approximately 7,000 acre feet per year and the Stillwater flows approximately 42,300 acre feet per year.

The pipeline would be approximately 1500-foot-long, 3-inch-diameter, temporary, and installed above ground. The water would be pumped using a diesel-driven, three-cycle engine that is 5 feet long, 2.5 feet wide, and 3 feet tall. The pump would be located at the southeast corner of the bridge as close to the stream as possible. After initially mixing the drilling fluid, the pump would be operated for two to three hours per day.

Water for drilling, construction and maintenance would be hauled from off the site if a permit to drill for water on site cannot be obtained from the State Engineer. This would require Chevron to purchase water elsewhere and haul via truck the amounts described above.

Also, Chevron would apply for a permit to haul water from (1) the bridge crossing on the Stillwater to begin the construction of the road (for suppressing fugitive dust) and (2) also the bridge crossing on the Main Fork as an alternative source to the water well and/or pipeline and for road work and construction of the well pad. In the driest conditions, dust control along the road to the well site would require approximately six 300- to 400-gallon truck loads per day. However, this is considered a worst case and the use of this amount of water is not anticipated.

Road Upgrade and Construction

The proposed action would include restoring 0.8 mile of Stillwater Road (Forest Road No. 057), improving 2.1 miles of Peninsula Road (Forest Road No. 306), constructing 2.8 miles of road (2.0 miles along the west side of Main Fork stream and 0.8 miles on the east side of the stream) from the end of the Peninsula Road to the proposed well site, construction of a bridge at the crossing of the Main Fork. Also, 2.4 miles of the Main Fork 4WE trail (Forest Road No. 097) would be rehabilitated.

The first 0.8 mile of the Stillwater Road would be restored to the approved traffic service level. The reconstruction work would consist of turnpike grading (embankment [fill] is obtained from borrow ditches adjacent to the road prism), gravel surfacing, and revegetation of all disturbed areas outside the travelway.

Two miles of the Peninsula Road would be reconstructed to improve the operating efficiency and maintainability. The road betterment work would include subgrade conditioning, drainage structures, turnouts, rock berm removal, gravel surfacing, 500 foot (±) of curve realignment, and revegetation of all disturbed areas. With exception of the 500 feet of curve realignment and turnouts, all work would be accomplished within the existing road prism.

The road work extending south from the Peninsula Road would include two miles of reconstruction and relocation of the Main Fork Road, 0.8 mile of new construction, and a bridged stream crossing.

The 2.4 miles of the existing Main Fork Road would be obliterated and revegetated. The road is badly eroded, unmaintainable, and fords the Bear River tributaries three times.

Approximately eight to ten acres would be disturbed by upgrade, relocation, and construction activities along the road proposed to the well site. The work would begin with clearing vegetation that has grown into the ditches and road shoulders along the Peninsula Road and clearing the new location of the Main Fork Road. Then the Main Fork Road would be rough graded for better surface access to the stream crossing. When the crew reaches the Main Fork stream, the temporary bridge (steel-beam span covered with decking) would be installed to protect the quality of the water and the riparian vegetation on either side of the stream. (The temporary bridge would require State and Federal permitting [Section 404, Clean Water Act]). All wet areas and riparian vegetation would be avoided and an undisturbed buffer of vegetation would be left between these areas and the road to assist in controlling runoff from the road (potentially resulting in erosion and sedimentation of the stream). Once the stream is crossed, vegetation clearing will continue along the Main Fork Road, the new road alignment, and the well site. Maximum sustained grade would be about eight percent. Large rocks make conserving topsoil practically impossible. An aggressive program of soil sampling/fertilizing, seeding, and mulching would be implemented.

A bridge, satisfying Forest Service standards, over the Main Fork would then be installed. The bridge would be set on treated timber or concrete sills. To minimize the need for rip rap and other channel-infringing activities, the sills would be set back at least five feet from the existing stream bank. Bridge elevation and bank protection would be the minimum necessary for a 10-year flood with no stream-flow constriction and would accommodate a 50-year flood. Chevron would use dips or roll grade to remove

surface water from the road a minimum of fifty feet on either side of the bridge. The Forest Service would review the bridge site plan prior to submission for State and Federal permitting (Section 404, Clean Water Act).

Wetland areas, where they occur relatively close (10 to 15 meters) to the proposed road, would be avoided to the extent possible. The road would be placed in such a manner so that it would not intercept or redirect drainage to these wetlands, or otherwise affect drainages to other wetlands downgradient. Culverts would be installed where necessary. Refer to the typical drawing in Appendix J. Means of spreading drainage from the road would be implemented (for example; lateral ditch and outlets) and sedimentation barriers (for example; straw bales, slash) would be used at the base of the road to protect downslope wetlands from soil erosion. Where wetlands are crossed, specific mitigation has been developed by Chevron and the Forest, and the plans would be submitted to the COE for review and approval prior to construction.

This road passes through the Howe Flume Historic District, which is on the National Register of Historic Places. With careful planning, appropriate mitigative action approved in conjunction with the Forest and the Utah SHPO, the planned access road through the Howe Flume Historic District could be used with no adverse effect to the Historic District.

Road Management (Open-Road Management Alternative)

Peninsula Road, including the relocated road, along the Main Fork, would remain open to the public to the point where the new bridge would be installed across the Main Fork in Section 17. This open-road policy would be applicable after construction and drilling operations are completed, whether or not the well is successful and if the goshawk nest is unoccupied.

A trailhead will be constructed near the Main Fork bridge. The clearing or disturbance required for the trailhead will be about 4,000 square feet, and will require very little cut and fill. Gravel surface may be necessary.

That portion of the road east of the proposed new Main Fork bridge would be closed to public traffic at all times. If the well is not successful, this section of the road would be reclaimed or rehabilitated and seeded with grasses to control erosion. The bridge at the Main Fork would be removed and a trailhead constructed for hikers to use when traveling to Hell Hole Lake.

The existing primitive road, from where it enters Hayden Fork (west side) to its end in Section 17 would be closed to motorized traffic, scarified, and seeded with grasses. Currently, erosion from vehicle ruts along the road and the in-stream crossing of the Hayden Fork contribute to sediment in the stream.

A seasonal closure (closure to all but authorized users) would be enforced starting on September 15. The road would then be opened to public travel on May 1 depending on road conditions and whether the goshawk nest is occupied. This would effect all of the road south of the existing gate on the bridge over the Stillwater Fork. This would require the gate at the Stillwater crossing on the Peninsula road remain in place and closed during the seasonal closure.

The one mile of existing road paralleling the overhead powerline between the Lily Lake trailer dump station and the Bear River Ranger Station would be closed. This road lies within the same Road Management Unit as Peninsula Road and closing this road would maintain the existing road density.

The seasonal closures of this open-road management alternative would mitigate impacts to migrating elk during November and maintain the area for a quality hunting experience during the general elk and deer

hunting season. This open-road management alternative would open additional country for potential dispersed camping and recreational opportunities during the summer months and would provide easier access to Hell Hole Lake and the surrounding area. Use of the nearby portion of the High Uintas Wilderness would probably increase; however, it is difficult to predict at this time whether congestion would be reduced in other areas of the Wilderness or increase the use of the Wilderness as a whole.

Increased public use into the Main Fork area potentially could increase vandalism of the extant cultural resources related to the Howe Flume Historic District, but it also provides an opportunity for more of the public to visit this area to gain a greater appreciation for the cultural resources and the history of the area. Interpretive signs describing the history of the District would be installed by the Forest Service to mitigate effects of road construction.

The proposed relocation of the Main Fork Road would cross two parcels of land where a No Surface Occupancy (NSO) stipulation has been applied. The first location is the T1N R10E N 1/2 SE 1/4 Section 17 and T1N R10E N 1/2 NW 1/4 Section 21. The lease, No. U-54044, states the following reasons for the NSO stipulation:

- erodible soils
- moderate visual resources
- high recreation value and/or
- Christmas Meadows Recreation Area withdrawal

Chevron has applied for a modification to the NSO stipulation for the following reasons:

- The Christmas Meadows Recreation Area withdrawal is outside of the project area to the east and will not be affected.

- The description of the soils in Section 21 as stated in Chapter 3 of this EIS is: Erosion, stability hazards, and reclamation constraints are moderate to low. The construction hazards and reclamation potential is moderate due to slumping susceptibility on steep slopes and in wet areas. The proposed road is not on steep slopes or wet areas. Engineering survey and design shows that mitigation measures can be successfully applied.

- The description of the soils in Section 17 as stated in Chapter 3 of this EIS is: Erosion, stability hazards, and reclamation constraints are moderate to low. The overall construction hazard potential is low. Engineering survey and design shows that mitigation measures can be successfully applied.

- The existing Recreation Opportunity Spectrum (ROS) is semi-primitive motorized (SPM) and the Forest Plan Direction is Roaded Natural Appearing (RNA), the area is not a high use area, the recreation values are not high.

  - The recreation values are the same as the rest of the Main Fork drainage. The Forest Plan, page IV-37, lists "Campgrounds and Very High Use Areas, ROS-Primitive" as criteria for high recreation values. The Main Fork drainage clearly does not meet this criteria.

- Visual characteristics are middleground, sensitivity level 2, variety class B, and Visual Quality Objective of Modification.

  - The Forest Plan, page IV-37, lists criteria for medium visual resource values as Modification; however, on page IV-39 this

would only require a stipulation to meet the Forest Plan Visual Quality Objectives, which this project does.

The intent of the Forest Service was to apply lease stipulations as they relate to the location and construction of a drill pad and production facilities, but not roads. Forest Plan direction, standards, and guidelines still provide guidance for road design and layout. However, since this may not be a common understanding among all interested parties at this time, Chevron decided to apply for a modification to the NSO stipulation for those areas that should be crossed by the road.

Since the road had been located and designed following the direction contained in the Forest Plan, a modification can be easily justified. None of the resources for which the NSO was applied in the first place would be compromised.

Gravel Source (Alternative Gravel Source C)

Gravel from Alternative Gravel Source C would be used for surfacing the road and well pad. The proposed gravel pit would be located at the end of the existing Peninsula Road (NE 1/4 NE 1/4 Section 8). The site is adjacent to a large open area, no trees larger than seedling/sapling class would have to be cleared to work the area or widen the road. The site is located 1,000 feet from riparian areas associated with the Stillwater Fork or the Main Fork. The site contains more clay-type binding material and would provide more stable, longer lasting surfaces than Alternative Gravel Sources A or B (described earlier in this Chapter under "Alternatives Considered but Eliminated From Detailed Study"). It appears to have enough fines (minute particles) and rocks to make gradation (proper ratio of rock to fine material) without large piles of rejected material. This site may produce a spoils pile of oversized rocks. The approximate size of the pit would be 0.5 acres and would provide between 7,000 and 9,000 yards of material, but would be limited to the extent possible to minimize disturbance. A rock crusher and/or screen would be moved onto the site. Approximately 5,500 cubic yards of gravel would be required for the road and about 1,800 cubic yards would be required for the well pad. Once the gravel has been removed and as per Forest Service instructions, Chevron will ensure all slopes are stabilized by laying them back to a natural appearance and seeded, and that sediment generated by the pit will not reach any streams.

No-Action Alternative

Although the "no action" alternative would not allow a valid test of the operator's lease, the NEPA requires that a "no action" alternative be considered in all environmental documents. Under the No-Action Alternative, the Forest Service would not approve the Surface Use Plan of Operation (SUPO) per 36 CFR 228.107(b), and the BLM would not approve the APD. This would be a denial of the APD for this particular well at this time. It would not constitute denial of exploration and possible development somewhere on the lease or within the Unit.

An oil and gas lease grants the "right and privilege to drill for, mine, extract, remove and dispose of all the oil and gas deposits" in the leased lands, subject to the terms and conditions incorporated in the lease. The denial of the right to drill somewhere on the lease would void the lessee's contractual rights unless the lease itself reserved the right to implement the denial of such activity (see Sierra Club v. Peterson,717 F2d 1409 (D.C. Cir. 1983).

Oil and Gas leases contain standard terms, as well as Regulations at 43 CFR 3162.3 and 36 CFR Subpart E 228.106 and 228.107, which indicate that before approving any surface disturbing activity, reasonable conditions not inconsistent with the purpose or rights granted by the lease, may be required to protect the

surface of the lease lands and environment. With one exception, however, none of these lease terms or regulations would enable the Forest Service, in this case, to deny all drilling activity because of environmental concerns. With respect to the one exception, the provision that expressly empowers such a denial reads as follows:

> The Forest Service is responsible for assuring that the area to be disturbed is examined, prior to undertaking any ground disturbing activities on lands covered by this license/permit/lease, to determine effects upon any plants or animal species listed or proposed for listing as endangered or threatened, or their habitats. The findings of this examination may result in some restrictions to the operator's plans or even disallow any use and occupancy that would detrimentally affect any of the endangered or threatened plant or animal species.

The stipulation, however, only empowers the discretionary rejection of all activity in limited circumstances; namely, in the instances in which use and occupancy would "detrimentally affect" certain endangered or threatened species as determined by the USFS. The Biological Evaluations do not indicate that to be the situation.

Under this alternative, the environment would remain as it presently exists (refer to Chapter 3) with no well site or road constructed and no reclamation of the primitive road that crosses the Hayden Fork. Currently, erosion from vehicle ruts in the adjacent road and the in-stream crossing of the Hayden Fork contribute sediment to the stream.

The lease involved with this proposal and the leases within the Unit do not prohibit all surface occupancy and therefore exploration and development somewhere on the lease cannot be denied without canceling the lease. To authorize exchange, condemnation, or buy-back of the lease or leases within the area, the Secretary could only suspend the leases pursuant to section 39 of the Mineral Leasing Act pending consideration by the congress of a grant of authority to preclude drilling and provide recompense to the lessees.

Well Site Alternatives

Two alternatives for the exploratory well site were identified by Chevron: Alternative Well Site A (described as part of the proposed action above) and Alternative Well Site B. (Refer to Figure 2-2.)

Alternative Well Site B A Notice of Staking was received by the Forest and BLM on March 31, 1989, with the intention of drilling an exploratory oil well in T1N R10E NW 1/4 NE 1/4 Section 21 located on Federal Lease U-54044. Access to this site would be the same as access to Alternative Well Site A except that it would require an additional 1.6 miles of road construction (that is; restore 0.8 mile of Stillwater Road, improve 2.1 miles of Peninsula Road, relocate 2.0 miles of the Main Fork Road, and construct 2.4 miles of new road). A portion of the 1.6 miles of new road would climb the side of a steep (35 to 70 percent) mountain slope with shallow soils. The alternative well site is located in a wet meadow area, a wetland that could require extensive mitigation in accordance with Section 404 of the Clean Water Act.

Road Management Alternatives

Three alternatives for future management of the road from the existing gate and Stillwater bridge on the Peninsula Road were considered: The Open-Road Management Alternative (described as a part of the proposed action above), Closed-Road Management Alternative, and Reclaimed or Rehabilitated Road Management Alternative. If the well is successful and commercial quantities of hydrocarbons are found, there are only two alternatives and, if the well is a dry hole, there are three alternatives.

The existing Peninsula Road now dissects a designated old growth stand isolating approximately 25 acres from the larger portion of 284 acres. This proposal did not create the problem, however it could potentially aggravate it by increasing traffic on the road (refer to Figure 3-5). A "non significant" amendment to the Forest Plan would be necessary to designate additional timber stands to replace the 25 acres effected by the road.

Closed-Road Management Alternative This alternative could be used if commercial quantities of hydrocarbons are found or if the well is a dry hole. The road bed would be left in place for future Forest management needs. The existing gate at the Peninsula Road Stillwater bridge would remain in place and the closure maintained as it now exists. The primitive road would be blocked at the point where it first drops into the willow bottom and starts to cross the Hayden Fork from the Mirror Lake Highway. The entire 2.4 miles of primitive road would be rehabilitated. The newly constructed road and the existing Peninsula Road would be closed to the public during construction, drilling, and operation of the well to allow for authorized use only. If the exploratory well produces hydrocarbons in commercial quantities, authorized use would include access needed for production and would increase beyond that of the present situation.

Reclaimed- or Rehabilitated-Road Management Alternative This alternative could be used if the well is a dry hole, but not if the exploratory well is successful and production ensues. The newly constructed portion of the road to the well site would be rehabilitated and returned to as near to the existing condition as possible or to a condition that would allow continued use as a 4WD trail up to the point where it crosses the Main Fork. The new road from the point where the 4WD trail connects, north to the end of the existing road, would be reclaimed to the exclusion of all 4WD access.

COMPARISON OF ALTERNATIVES

No Action

Under this alternative, the environment would remain as it exists with no well site or road constructed. However, with this alternative the primitive road crossing the Hayden Fork and Main Fork would remain. Currently, erosion from vehicle ruts in the adjacent road and the in-stream crossings contribute to sedimentation in the streams.

Alternative Well Site A

Construction of the well pad (3.43 acres), road work (12.98 acres), and gravel source (.5 acre) would result in 16.91 acres of disturbance. Inherent erosion hazards are low to moderate for all disturbance. Vegetation is primarily mature post- and pole-size lodgepole pine. At the well site and along the road, approximately 12 to 14 acres of mature age class lodgepole pine would be removed. The effects of removing habitat would be essentially the same at either site.

To Alternative Well Site A, a total of 4.98 miles of road work would be required. Of that 4.98 miles, .8 mile of the work would be construction of new road. The well pad and .8 mile of new road would be within the roadless area. The drilling rig would be only slightly visible during daylight from a point on the Mirror Lake Highway about 3.5 miles north of the site. At night, the lights from the drilling rig would be noticeable, but not dominant. The drilling rig would be visible for approximately 2.5 miles from the Hell Hole Lake Trail and from the Main Fork Road. However, these visual impacts would be short term (only while the drilling rig is present). Production facilities would be screened from view.

Construction of the well site would not result in impacts to cultural resources.

Alternative Well Site B

Construction of the well pad (about 3.5 acres), road work (19.76 acres), and gravel source (.5 acre) would result in 23.76 acres of disturbance. Inherent erosion hazards at the well site are low to moderate; however, the portion of the road along the ridge to the site are mountain slope lands on shallow soils on slope gradients ranging from 35 to 70 percent. Erosion and stability hazards are moderate to high, construction hazard potential is high, and reclamation constraints are moderate to high. The alternative well site is located in an extensive wet meadow complex that would require extensive mitigation to develop. Vegetation is primarily mature lodgepole pine. At the well site vegetation also includes wet meadow species of alpine timothy, tall larkspur, bluejoint reedgrass, and sedges, and subalpine fir along the wet meadow are interspersed among the scattered stands of trees. At the well site and along the road, approximately eight or nine acres of mature age class lodgepole pine would be removed. The effects of removing habitat would be essentially the same at either site.

To Alternative Well Site B, a total of 7.3 miles of road work would be required. Of that 7.3 miles, 2.4 miles of the work would be construction of new road. The well pad and 2.4 miles of new road would be within the roadless area. The drilling rig would not be visible from the Mirror Lake Highway, Stillwater, Peninsula, or Main Fork roads. At one point (at similar elevation) along the Hell Hole Lake Trail, the drilling rig may be visible. As previously stated, impacts would be short term (only while the drilling rig is present). Production facilities would be screened from view. The portion of the road to the site that would be located on the side of the steep slope may be visible from the Mirror Lake Highway approximately 3.5 miles to the north.

Construction of the well site would not result in impacts to cultural resources.

COMPATIBILITY WITH ISSUES, STIPULATIONS, AND FOREST PLAN DIRECTION

Table 2-3 summarizes the compatibility of the proposed action with the issues, stipulations, and Forest Plan direction.

TABLE 2-3
COMPARISON OF ISSUES, STIPULATIONS, FOREST PLAN DIRECTION, AND COMPATIBILITY

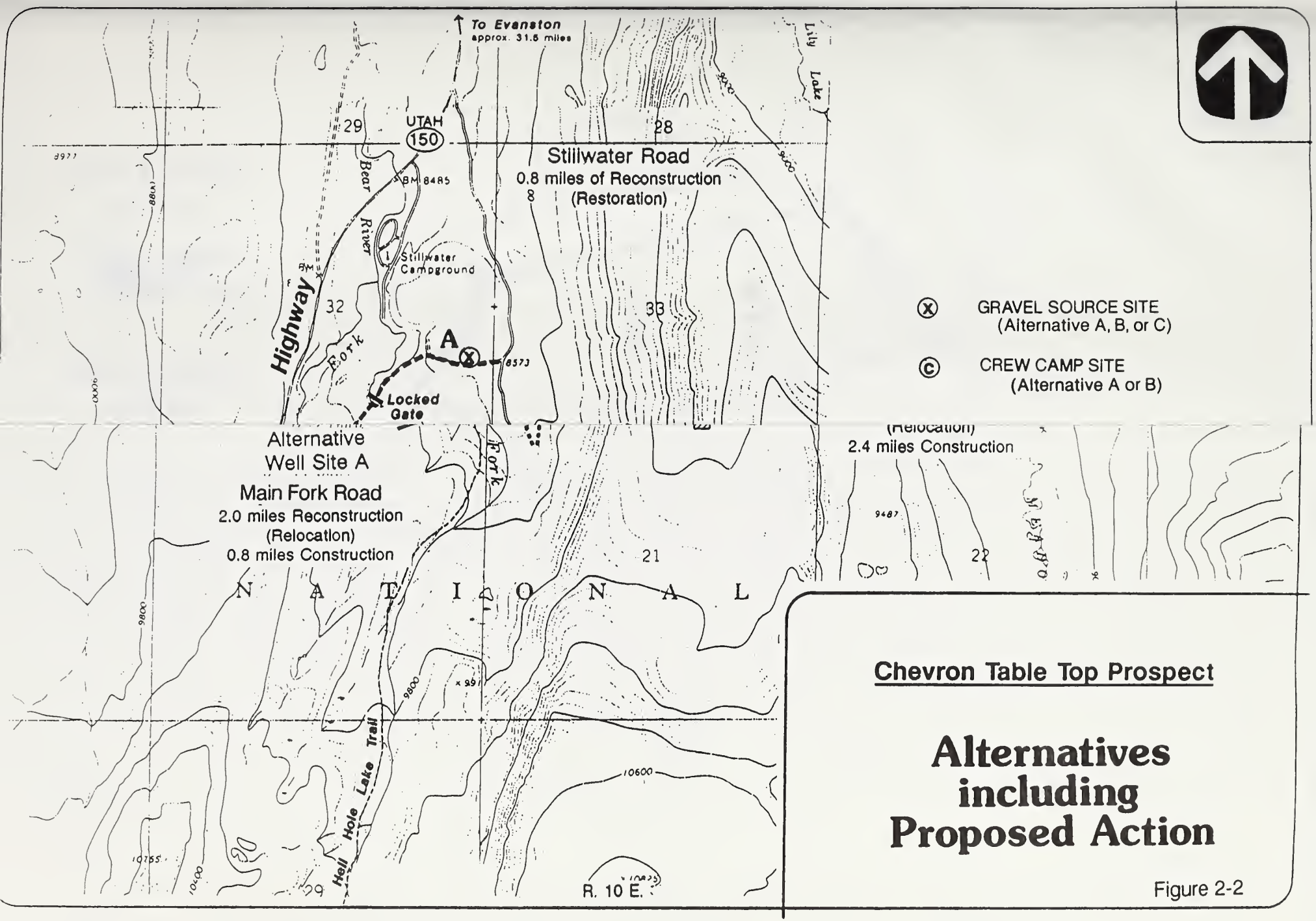
Issue	Applicable Stipulation	Forest Plan (FP) Direction	Compatibility with Alternatives
Issue 1 – The effects of drilling and production of the well on the local and state economies	Form 3109-3 Section 2, Clause D, to pay rentals and royalties in the amounts or values of production removed or sold from the leased lands.	None	All of the action alternatives would provide some jobs and income to the local and state economies. The no-action alternative would not provide additional jobs and income.
Issue 2 – The effects of drilling and production of the oil well on the values and characteristics of the roadless area	None	North Slope Management Area (Forest Plan p. IV-74) prescriptions provide for mineral leasing and development, timber harvest, livestock grazing, and other development activities. There are no requirements to maintain Wilderness characteristics or roadless area values.	All alternatives would be compatible with the Forest Plan direction. The No Action Alternative would not impact any of the roadless area. All of the action alternatives would intrude into the fringe of the roadless area. Alternative Well Site B would penetrate the roadless area the deepest. If the well produces the durations would be long-term. If not, then the duration may be retrievable.
Issue 3 – The effects of drilling and production of the oil well on the wildlife species and habitat.	Stipulations provide for the protection of threatened and endangered species. From 3109-3 Section 2, Clause Q provides for protection of surface, natural resources, and improvements. A controlled surface use stipulation, applicable to the T1N R10E NE 1/4 Section 17, E 1/2 Section 5, E 1/2 Section 8 (both alternative well sites) and E 1/2 Section 16 (Alternative B), is to minimize erosion, protect visual resources, watershed area, recreational resources, slopes in excess of 40% and/or wildlife habitat.	Mineral lease development will be coordinated with other resources (Forest Plan p. IV-75). Coordinate the development of range, timber, roads, oil & gas leasing, and other resources with the needs of wildlife (Forest Plan p. IV-84).	There are no known T&E habitat or animal species. The proposed project is located in winter/summer transition habitat for moose, elk, and mule deer. Public access would be prohibited during construction and drilling (authorized access only). After completion of the well, the road would not be left open to the public during the elk hunt season and until June. Significant impacts could result if the road is left open during the transition period. The northern goshawk nest in the vicinity of Stillwater Road would not be disturbed. Wetland areas would be mitigated appropriately in coordination with COE.
Issue 4 – The effects of drilling and production of the oil well on existing recreation uses in the area.	Form 3109-3, Section 2, Clause Q provides for protection of surface, natural resources, and improvements. A controlled surface use stipulation, applicable to the T1N R10E NE 1/4 Section 17, E 1/2 Section 5, E 1/2 Section 8 (both alternative well sites) and E 1/2 Section 16 (Alternative Well Site B), is to minimize erosion, protect visual resources, watershed area, recreational resources, slopes in excess of 40% and/or wildlife habitat.	Forest Plan p. IV-74 – Develop recreation opportunities along streams and lakes. Provide a variety of dispersed recreation opportunities with an emphasis on opportunities that use existing roads. Maintain existing trails. Provide trailheads needed to serve the High Uintas Wilderness.	All alternatives would be compatible with the Forest Plan direction. With the No Action Alternative there would be no change in the existing situation. With all of the action alternatives there would be some impact to dispersed users. Improved access to Hell Hole Lake area and an improved trailhead would result. Access to this portion of the Main Fork would be easier for those wanting this type of access and recreation experience with the action alternatives. The existing users would lose some of their solitude, but access to Hell Hole Lake and Howe Flume Historic District would be improved.

TABLE 2-3 (Continued)

Issue	Applicable Stipulation	Forest Plan (FP) Direction	Compatibility with Alternatives
Issue 5 – The effects of drilling and production of the oil well on road management in the future.	Form 3109-3, Section 2, Clause Q provides for protection of surface, natural resources, and improvements.	Forest Plan p. IV-17 – A road management program will be established to develop and maintain a safe, economical, functional, and environmentally sound transportation system that serves the resources. Forest Plan p. IV-43 – Density levels will be established for each Road Management Unit (see Management Areas).	The proposed road meets the Forest Plan goal by providing a safe, economical, functional, and environmentally sound road which replaces an unsafe road that is causing erosion and sediment into Hayden Fork and Main Fork. All action alternatives would reclaim the unsafe road. All of the alternatives would meet the Forest Plan direction for road density. The open road alternative would close a road near Lily Lake to meet the road density standard.
Issue 6 – The effects of drilling and production of the oil well on water quality in the Stillwater drainage.	Form 3109-3, Section 2, Clause Q provides protection of surface, natural resources and improvements. A controlled surface use stipulation, applicable to the T1N R10E NE 1/4 Section 17, E 1/2 Section 5, E 1/2 Section 8 (both alternative well sites) and E 1/2 Section 16 (Alternative Well Site B), is to minimize erosion, protect visual resources, watershed area, recreational resources, slopes in excess of 40% and/or wildlife habitat. Stipulations call for disturbance to be at least 500 feet from high water line of streams.	The Management prescription is to maintain water quality (Forest Plan p. IV-75). Forest goal (Forest Plan p. IV-12) is to maintain water quality on all surface waters of the National Forest to comply with State water quality standards and anti-degradation policy.	All action alternatives would incorporate best management practices or Conditions of Approval to protect water quality. A water quality monitoring program has been implemented for this project. Water quality could be improved by relocation and closure of the primitive road across Hayden Fork and along the Main Fork. With appropriate mitigation applied, disturbance within 500 feet of a stream can meet the intent of the Forest Plan and can be approved in the Surface Use Plan.
Issue 7 – The effects of drilling and production of the oil well on the aesthetic and visual characteristics of the area.	Form 3109-3, Section 2, Clause Q provides protection of surface, natural resources and improvements. Surface disturbance Stipulation No. 10, All operations will be conducted to protect aesthetic and scenic values. A controlled surface use stipulation, applicable to the T1N R10E NE 1/4 Section 17, E 1/2 Section 5, E 1/2 Section 8 (both alternative well sites) and E 1/2 Section 16 (Alternative Well Site B), is to minimize erosion, protect visual resources, watershed area, recreational resources, slopes in excess of 40% and/or wildlife habitat.	The Visual Quality Objectives established in the Forest Plan p. IV-25 are partial retention. A Forest Plan goal pp IV-6 is to provide for a pleasing landscape.	All alternatives would be compatible with the Forest Plan direction and lease stipulations as they relate to the Visual Resources. With the action alternatives the drilling rig would not meet partial retention during the drilling operation, which is very short-term. After drilling, partial retention would easily be met with or without production.

TABLE 2-3 (Continued)

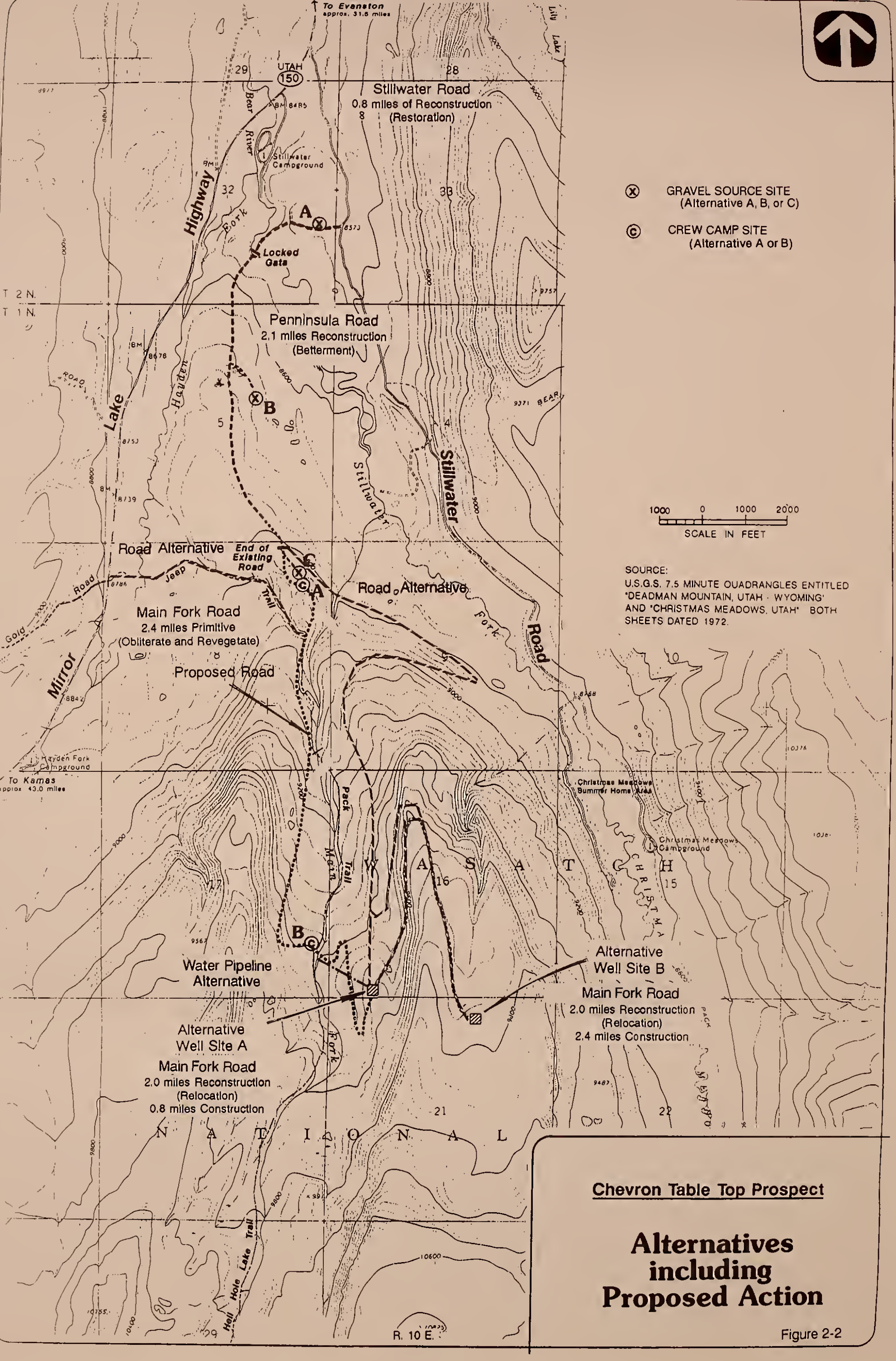
Issue	Applicable Stipulation	Forest Plan (FP) Direction	Compatibility with Alternatives
Issue 8 - The effects of drilling and production of the oil well on water supply to the Christmas Meadows summer-home area.	Form 3109-3, Section 2, Clause Q provides protection of surface, natural resources and improvements.	A Forest Plan goal, (p. IV-12) is to protect water need to successfully accomplish National Forest programs mandated by congressional acts and executive orders.	Based on available data, there is no support that this project would jeopardize water quantity of the summer-home area. There are no records of flow data existing for the summer-home water sources and a program for water quantity is not technically feasible. Chevron has implemented a program to monitor the quality of the water in the area - samples have been and will be taken from (1) the three springs that supply the water to the summer-home area and (2) the Main Fork before, during, and after construction activities.



Chevron Table Top Prospect

Alternatives including Proposed Action

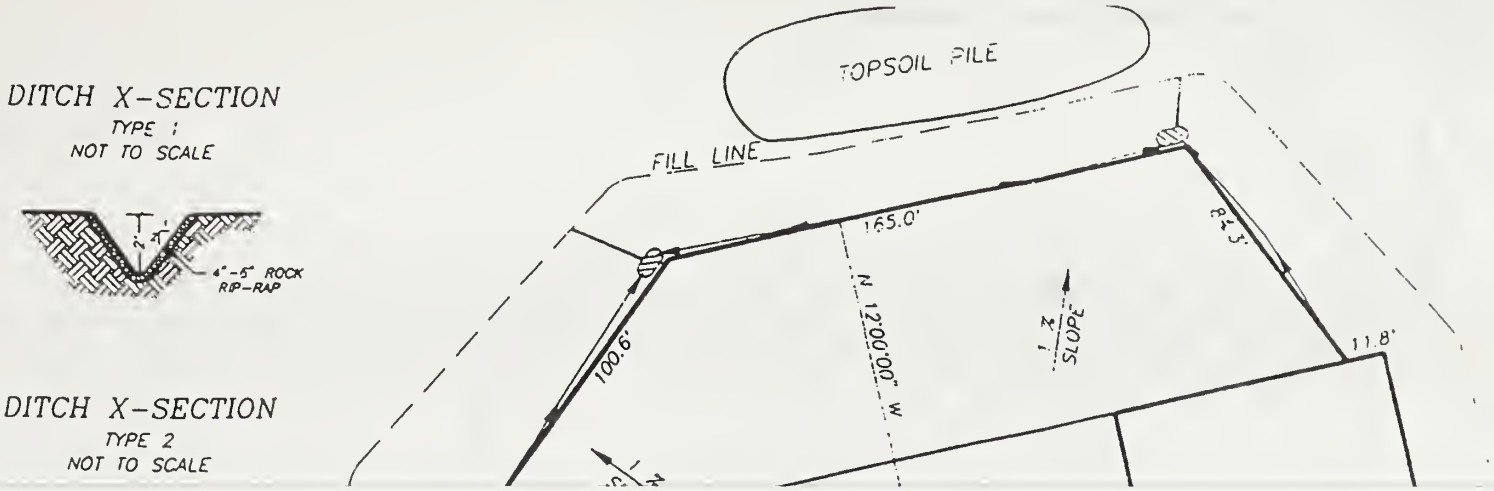
Figure 2-2

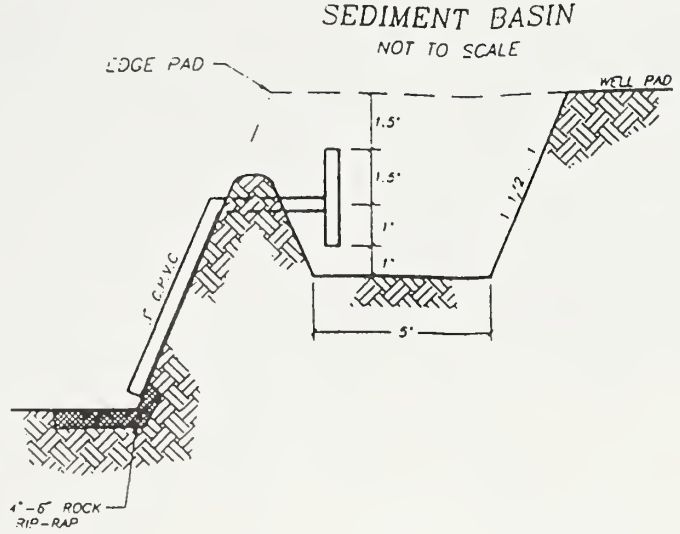


Chevron Table Top Prospect

Alternatives including Proposed Action

Figure 2-2





Chevron Table Top Prospect

Well Pad Layout

Figure 2-3

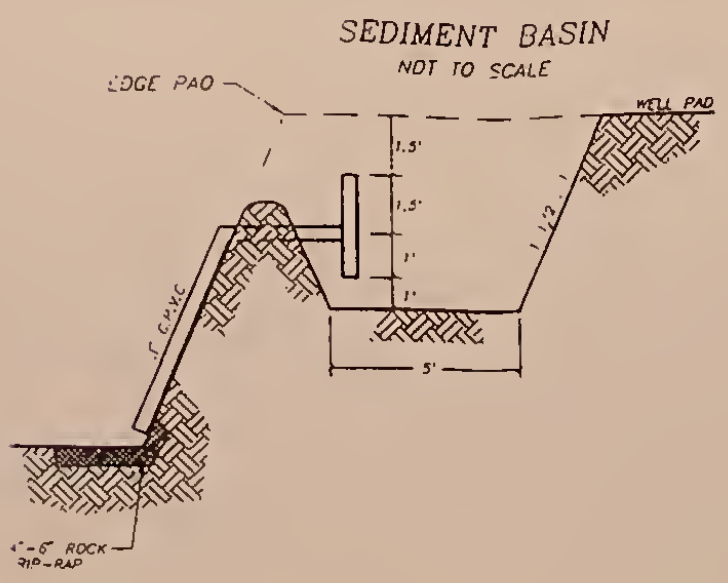
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TYPE 1
NOT TO SCALE



DITCH X-SECTION
TYPE 2
NOT TO SCALE



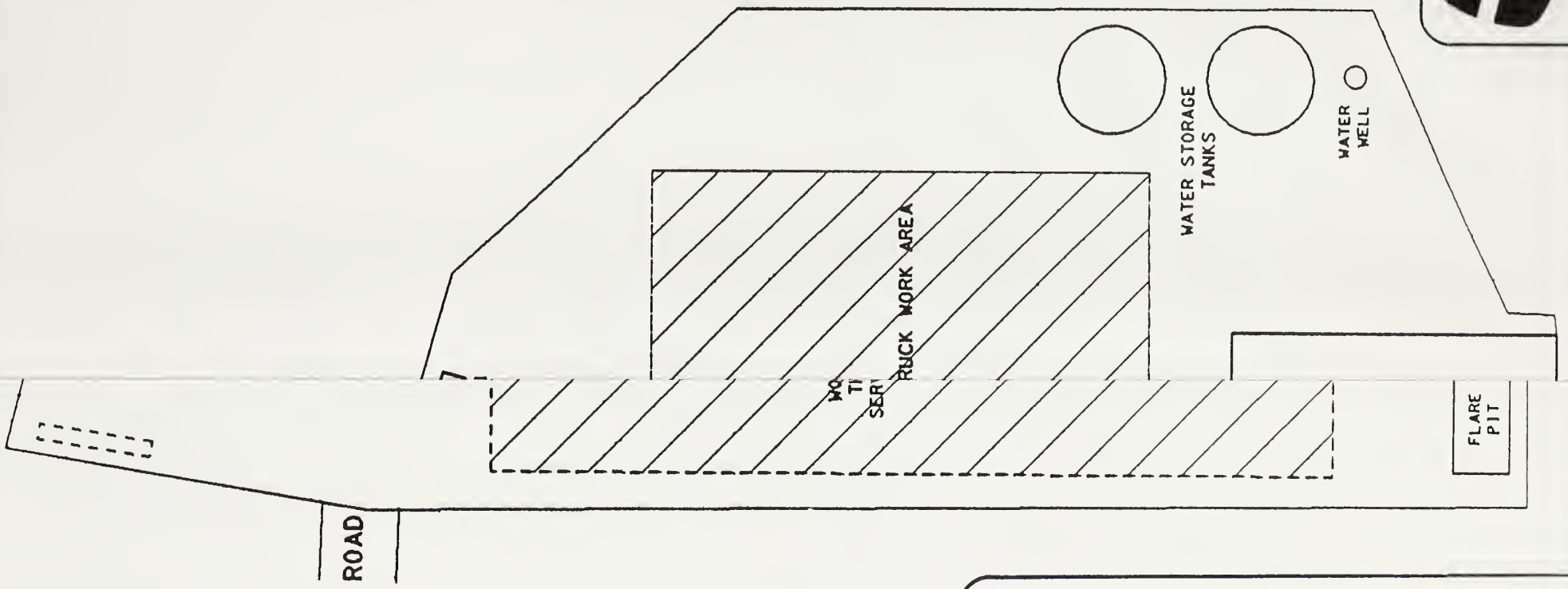
SEDIMENT BASIN
NOT TO SCALE



Chevron Table Top Prospect

Well Pad Layout

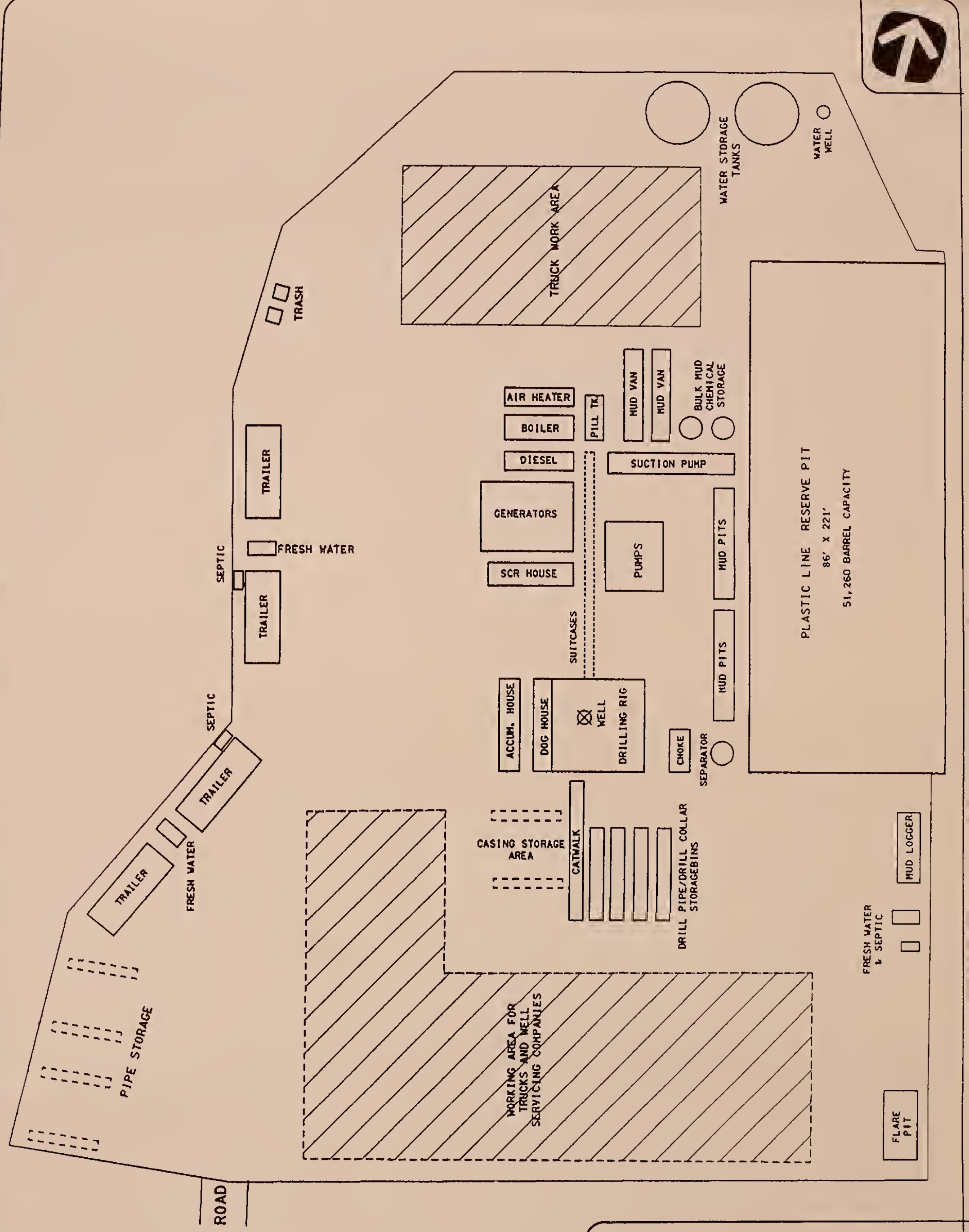
Figure 2-3



Chevron Table Top Prospect

Well Pad Site Plan

Figure 2-4



Chevron Table Top Prospect

Well Pad Site Plan

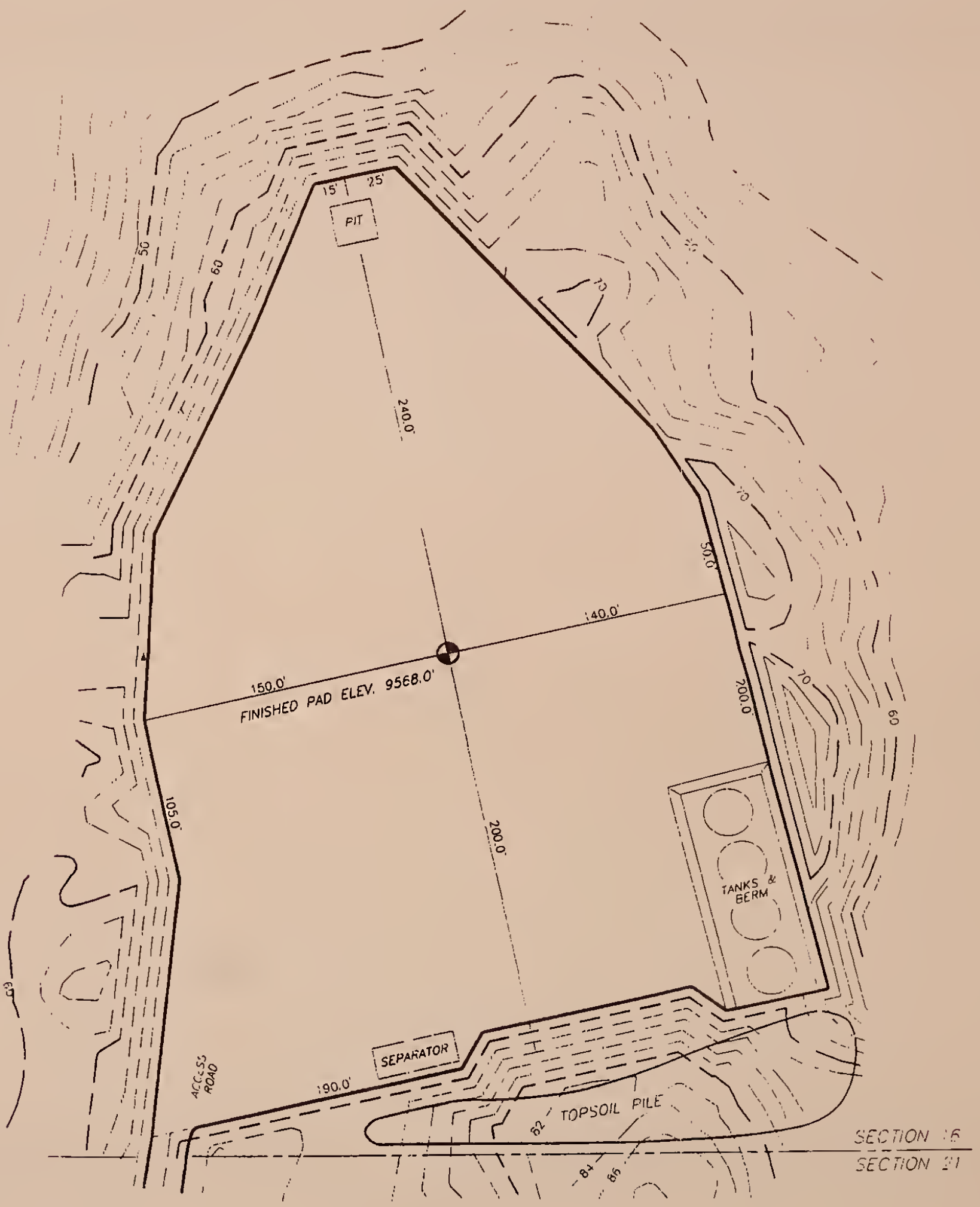
Figure 2-4



Chevron Table Top Prospect

Reclaimed Location

Figure 2-5



Chevron Table Top Prospect

Reclaimed Location

Figure 2-5

CHAPTER 3 – AFFECTED ENVIRONMENT

CHAPTER 3 – AFFECTED ENVIRONMENT

INTRODUCTION

The purpose of this chapter is to describe the existing condition of the physical, biological, social, and economic resources of the environment that may be affected by the implementation of any of the alternatives. This information serves as a "base line" by which to measure the potential impacts of the alternatives. All resources relevant to this project are addressed; however, discussions focus on the resources related to the key issues. (Note: All figures are inserted at the end of this chapter.)

AFFECTED RESOURCES

Geology

The purpose of this section is to characterize the general geology of the area, identify areas with known potential hazards such as active faults and rockfall-prone areas (slope failure is addressed in Soils and Landform section), investigate known mineral resources of the site area, and discuss the known paleontological resources of the site area.

Areas with known mineral or paleontological resources are to be identified so that these resources may be protected from loss due to project action or appropriately mitigated. Areas with known geologic hazards are to be identified so that construction of the project may be modified so that hazards are not increased or are avoided.

Geological and paleontological resources investigations were conducted based on appropriate Federal and State requirements including NEPA (42 U.S.C. 4321-4347, 40 CFR Parts 1500-1508, 23 CFR 771), National Forest Management Act of 1976 (36 CFR 219 Subpart A), and the Antiquities Act of 1906 (16 U.S.C. 431-433) as amended.

This is based on available published literature, maps, and data for the area as well as conversations with resource specialists. The following agencies were contacted for information and references: Wasatch-Cache National Forest; BLM, Utah Geological and Mineral Survey; Utah State Historical Office; US Geological Survey; and Utah Division of Oil, Gas, and Mining. From the available data, the general geology including seismicity, known mineral resources, and paleontological resources of the project area were mapped on the project base map (1:24,000).

The project area is located in the Uinta Mountains of the Middle Rocky Mountains physiographic province. The Uinta Mountains are a broad east-west trending anticline varying 40 to 50 miles in width, and 150 to 175 miles in length. The anticline is bounded on the north and south by the North and South Flank Faults. The South Flank Fault is a series of normal faults that dip steeply to the south. The North Flank Fault is a series of reverse or thrust faults that dip at 60 degrees to 90 degrees to the south. The Wasatch Mountains to the west of the Uintas, trend north-south. The alignment of the two mountain ranges is the result of an extensive east-west bulge in the earth's crust called the Uinta Uplift. The core of the Uinta Mountains consists of Late Precambrian metasedimentary rocks of the Uinta Mountain Group. The core rocks are rimmed by Paleozoic rocks that dip moderately to gently away from the mountain range on the northern, western, and southern sides. To the north of Christmas Meadows, the Uinta Mountain Group rocks are juxtaposed against a fault-bounded series of Paleozoic rocks by a southward dipping reverse fault. The Paleozoic rocks have been mapped by the Utah Geological and Mineral Survey (1980) as the Mississippian Madison Limestone and Pennsylvanian Weber Sandstone. These rocks dip gently to the

north. To the east of the Alternative Well Sites A and B the fault-bounded series includes the Permian Park City Formation, the Triassic Nugget Sandstone, and the Cretaceous Dakota and Cedar Mountain Formations (Stokes 1986, Utah Geological and Mineral Survey 1980, 1990, Wallace and Crittendon 1969).

The topography is characterized by steep-sided mountainous uplands. The area has a distinctive glacial topography with gently-sloping, semicircular, flat-bottomed cirque valleys separated by steep-walled narrow aretes. There are numerous glacial remnant rock-rimmed lakes in the area. Gravel and boulder benches from glacial deposits are common in the area. These glacial deposits are sources of sand, gravel and cobble which may be used for roads and other various construction and building industry. Outliers of the Oligocene Bishop Conglomerate, Quaternary glacial debris and valley fill (alluvium and colluvium) overlie the bedrock of the Uinta Mountain Group, Madison Limestone, and Weber Sandstone in the Christmas Meadows area.

The following formations occur in the proposed project area and therefore may be encountered in drilling or during project-related activities. The descriptions are based on regional, not site-specific, information.

The Red Pine Shale of the Precambrian Uinta Mountain Group is the youngest of six subdivisions. The Red Pine Shale consists mainly of brownish-gray or olive-drab shale with some blackish and reddish colored layers. It is approximately 5,000 feet in total thickness. This shale has fossils of Chuaria (Stokes 1986) that aids in correlation with other Precambrian units.

The Mississippian Madison (Lodgepole) Limestone is typically a dark gray, fine- to coarse-grained, massive- to thin-bedded, cherty limestone with minor amounts of interbedded dolomitic limestone. This rock unit is often fossiliferous and may include crinoids, corals, conodonts, bryozoans, gastropods, pelecypods, brachiopods, protozoans, cephalopods, trilobites, sponges, ammonoid, and echinoderms (Hintze 1988, Stokes 1986).

The Pennsylvanian Weber Sandstone is a tan to light gray cross-bedded quartzitic sandstone and conglomerate. This unit may include fossils of invertebrates (Hintze 1988, Stokes 1986).

The Permian Phosphoria and Park City Formations are intertonguing facies, which overlie the Weber Sandstone. The Park City Formation is dominantly a shallow water marine limestone; the Phosphoria represents deeper water sediments including cherts, shales, and phosphatic shales. These units also may be encountered during drilling. The formations may include fossils such as fusulinids, brachiopods, pelecypods, gastropods, bryozoans, echinoderms (crinoids predominantly), cephalopods, corals, and scaphopods (Hintze 1988, Stokes 1986). The Weber and Phosphoria formations have a potential for yielding hydrogen sulfide (H_2S).

The Triassic Thaynes Formation consists primarily of limestone. Marine clams, pelecypods, crinoids, sponges, starfish, snails, brachiopods, conodonts, and ammonoids are fairly abundant. This formation includes important deposits of lead-zinc ores in the Park City district of Summit County (Hintze 1988, Stokes 1986).

The Jurassic-Triassic aged Nugget Sandstone consists of cross-bedded aeolian sandstone that represents part of a massive sand dune field (Hintze 1988, Stokes 1986).

The Jurassic Morrison Formation consists of varicolored mudstones, stream channel sandstones and conglomerates, and lacustrine limestones. The Morrison Formation includes more known localities and a greater abundance of dinosaur bones than any other formation in the world. No significant finds have been located in the vicinity of the project area (Hintze 1988, Stokes 1986).

The Cretaceous Dakota Sandstone is a series of interbedded shales and sandstones. The sandstone is cross-bedded, friable, and noncalcareous. Many gas fields produce from this formation. The Cretaceous Mowry Shale is a light gray silicious shale with abundant, interbedded sandstones. The Mowry Shale is noted for fossil fish scales. The Cretaceous Frontier Formation is a massive- to thick-bedded, gray to tan sandstone. Some areas exhibit cross-bedding. This formation includes many important gas fields. The Hilliard Shale consists of marine shales. The Cretaceous Mesa Verde Group includes sandstones, shales, and coal (Hintze 1988).

The Tertiary Bishop Conglomerate consists of an alluvial veneer on high terraces derived from the Uinta Mountain Group.

The Quaternary deposits of the area have formed from alluvium and colluvium from glacial debris and from the surrounding mountains. Although there are no known or expected paleontological sites for these glacial deposits, a Columbian mammoth was found in a glacial bog in Huntington Canyon about 80 air miles south of the project area in 1988 (Utah State Historical Society 1991).

Seismicity The project area is located in the Uinta-Elkhead seismotectonic province. This province is characterized by west- to northwest-trending faults that are the surface expression of deep crustal structures. This area has historically been fairly quiet and with low seismicity. Recorded earthquakes in the area have had Richter magnitudes of less than 3.0 (Utah Geological and Mineral Survey 1990, Algermissen and others 1982, who have determined a maximum credible earthquake of 6.1 for the region). No known active faults occur in the proposed project area.

Geological Hazards A study completed by the Forest Service (no date) has delineated areas with known rockfall hazards and faults. Although rockfalls may occur in the region, no areas are identified in the project area. No active faults are known in the site area (Forest Service no date).

Mineral Resources The project area is located within a large oil and gas province known as the overthrust belt. The overthrust belt is an area of complexly folded and faulted rocks. Discovery of oil and gas in southwestern Wyoming in the late 1800s led to exploration in northeastern Utah. Currently there are 11 oil and gas fields in the region, including Bridger Lake (discovered in 1966). A transition area located between the North Flank Fault and the High Uintas Wilderness is believed to have potential for oil and gas. Subeconomic production has occurred from holes drilled to the Thaynes Limestone and the Phosphoria. Oil recovery has been reported from other wells in the area (Kaldenbach 1990).

The Cretaceous Mowry Shale and Frontier Sandstone contain black, organic-rich shale beds that are recognized as source beds in the main producing trend of the Overthrust belt. Oil has been produced from the Thaynes and Phosphoria Formations in the Christmas Meadows area (Kaldenbach 1990).

Soils and Landforms

Boundaries and descriptions of soils and landform within the project area were taken from a detailed Forest Service soil inventory (USDA 1971, Wilson et al. (1975) and a geological description of the Uinta Mountains (USDI 1975). A US Geological Survey (USGS) 7.5-minute topographic map was overlaid on the Forest Service landtype map in order to determine soils, landform, and hazard potentials traversed by the proposed project (Figure 3-1).

A slope failure/potential slope failure hazard map was compiled from USGS data obtained from the Wasatch-Cache National Forest and from the landtype-soil information (USDA 1971) (refer to Figure 3-2).

Slope failure data identifies areas of recent sliding and slumping but neglects to point out areas of potential slope failure. These areas were identified from characteristics of soils and landtypes in the project area.

The approach to the inventory was to evaluate project area soils and landform based on the available information. Major geomorphic units and soil types, and their physical properties were assessed. Hazard potential and reclamation constraints were defined by the following characteristics: depth to water table, flood occurrence, soil texture, slope gradient, infiltration rate, erodibility and stability (Table 3-1). This information was supplemented with field observations during a site visit of September 24-26, 1991.

Soils of the project area have formed from a variety of geologic materials (parent material) transported by water (alluvium), gravity (colluvium) and ice (glacial till). Parent material, as well as moisture regime, topography, vegetation and time produce soils with diverse characteristics.

Glacial till composed of quartzite and sandstone is the dominant parent material for soils in the project area. These rocks are of pre-Cambrian age and were extensively glaciated during the Pleistocene age. Numerous small glacial lakes and associated glacial features occur in the area. Soils vary widely in thickness, ranging from shallow to very deep, and in the main have sandy textures. The common particle size is sand, with clay and iron occurring as the common soil impurities. Resulting soil textures are mostly sandy, gravelly, and cobbly (Wilson et al. 1975).

The climate is dominantly humid and moist subhumid, and is characterized by cool summers and cold winters. Mean summer soil temperature at depths of 20 inches is less than 15 degrees centigrade (50 degrees fahrenheit). The average annual precipitation ranges from 55 centimeters to over 100 centimeters (22 to over 40 inches). Much of the precipitation occurs as snow during the period of October through April (Wilson et al. 1975).

The forests in Utah occur mainly on these soils and are used primarily for range, wildlife habitat, wood products, and recreation. These soils belong to associations that are the major water-yielding areas in the State. As such, care should be taken to protect surface-soil layers to avoid increases in runoff and sediment production (Wilson et al. 1975).

The project area soils are mapped as belonging to the Typic Cryortheuts - Typic Cryochrepts - Mollic Cryoboralfs Association (Wilson et al. 1975). This association is located in the Uinta Mountains in northeastern Utah. Elevations range from 8,000 to 11,000 feet and the slopes are rolling to very steep, mainly 15 to 65 percent.

This association consists of about 35 percent Typic Cryortheuts, 25 percent Typic Cryochrepts, and 15 percent Mollic Cryoboralfs. The other 25 percent is mainly Argic Cryoborolls and rock outcrop.

The Typic Cryortheuts are deep (40 to 60 inches) and moderately deep (20 to 40 inches), medium (5.6 to 6.0 pH) to strongly (5.1 to 5.5 pH) acid soils with hard bedrock below a depth of about 30 inches. The surfaces may have thin layers of forest duff and litter, one- to two-inches thick, overlying mineral soils. The surface mineral soil layers are brownish gray and very pale brownish-gray sandy loams and loamy sands that are gravelly, cobbly, and commonly stony or extremely stony. The subsoils are pink and reddish-brown sandy-skeletal. A representative soil series is Mirror Lake.

The Typic Cryochrepts are deep (40 to 60 inches) and moderately deep (20 to 40 inches), medium to extremely (less than 4.5 pH) acid soils with hard bedrock below a depth of about 30 inches. The surfaces may have thin layers of forest duff and litter, one- to two-inches thick, overlying mineral soils. The surface mineral soil layers are pink and pinkish-gray fine sandy loams and silt loams and are gravelly to very

TABLE 3-1
LAND AND SOIL TYPES

Map Symbol	Landtype - Soil	Infiltration Rate	Erosion Hazard	Stability Hazard	Slope Gradient (Percent)	Reclamation Constraints	Construction Hazard Potential	Remarks
A1	Alpine Crestland	Slow	Moderate	Moderate	5-20	High	Moderate to High	Hazard is greater on steeper slopes; low plant productivity; short growing season and severe climate; soil scars difficult to revegetate
A2	Alpine Rock Land - approximately 5 percent of landtype has soil cover	Very slow	Moderate	Low	40-100	High	High	Rock fall on steeper rock lands; unstable colluvial slopes; avalanche potential
A3	Alpine Basins - fine-loamy skeletal	Slow	Moderate	Low	20-45	Moderate	Moderate	High water tables in areas; high plasticity and compressibility of soil; paths of avalanches
B2	Wet Meadow Lands - organic clayey soils; ponds and marshes	Very slow	Low	Low	1-5	Low	High	High water table; low-bearing strength; high plasticity of soil
B3	Mixed Alluvial Lands - sandy skeletal	High	Low	Low	1-3	Moderate	High	High water tables; annual flood hazards
M2	Deep, Glacial Moraine Lands - coarse-loamy skeletal; fine-loamy skeletal	Slow-moderate	Moderate-low	Moderate-low	20-45	Moderate-low	Low	Drainages and seeps can cause road cut slumps; adequate culvert drainage needed; deep road cuts in coarse textures can unravel
M3	Hummocky Moraine Land - coarse-loamy skeletal; fine-loamy skeletal lakes and ponds	Slow-moderate	Moderate-low	Moderate	20-50	Moderate-low	Moderate	Slump hazard potential on steep slopes, under wet areas and ponds; seeps may impact road cuts
M5	Fluvioglacial Pediments - clayey skeletal; fine-loamy skeletal; coarse-loamy skeletal	Moderate-very slow	Moderate-low	Low	3-5	Moderate-low	Moderate	Extensive areas with shallow water tables; shallow road cuts may be affected; road beds may rut
Map Symbol	Landtype - Soil	Infiltration Rate	Erosion Hazard	Stability Hazard	Slope Gradient (Percent)	Reclamation Constraints	Construction Hazard Potential	Remarks

TABLE 3-1 (Continued)
Land and Soil Types

Map Symbol	Landtype - Soil	Infiltration Rate	Erosion Hazard	Stability Hazard	Slope Gradient (Percent)	Reclamation Constraints	Construction Hazard Potential	Remarks
M7	Valley Train Lands - sandy skeletal; coarse-loamy skeletal; fine-loamy skeletal	High-slow	Moderate-low	Moderate-low	2-20	Low-moderate	Moderate	Alluvial lands have seasonal flood hazard; surface erosion hazard on steeper, fine-textured surface soils
M12	Shallow, Mountain Slope Lands - coarse-loamy skeletal; lithic coarse loamy skeletal; rock outcrop and talus	Moderate-very slow	Moderate-high	Moderate-high	35-70	Moderate-high	High	Long duration of snow pack; steep slopes; seeps; short growing season; avalanche and landslide potential
T1	Ancient Stream Terrace Lands - coarse-loamy skeletal	High	Low	Low	2-10	Moderate-low	Low	Most stable unit; difficult to revegetate cut slopes; steep slopes may unravel
T2	Fluvial Moraine Lands - coarse-loamy skeletal; fine-loamy skeletal	High-very slow	Low-moderate	Moderate-high	10-20	Moderate-low	Low	High water table and low compressible soils in wet depressions; cut slopes difficult to revegetate and may unravel

flaggy. The subsoils are pink and pale-red loamy-skeletal or fragmental. Representative soil series are Cuberant and Marsell.

The Mollic Cryoboralfs are deep (40 to 60 inches) and moderately deep (20 to 40 inches), medium to very strongly (5.1 to 5.5 Ph) acid soils with fractured bedrock below a depth of about 36 inches. The surfaces may have thin layers of forest duff and litter, one- to three-inches thick, overlying mineral soils. The surface mineral soil layers are brown and very dark brown-loams and cobbly loams. The subsurface layers are brownish-gray and very cobbly loams. The subsoils are brown and reddish-brown loamy-skeletal and clayey-skeletal. A representative soil series is Cluff.

The soils in this association are well to excessively (over six feet to water table) drained. Permeability above the bedrock is very slow (less than .06 inches/hour) to very rapid (over 20 inches/hour). Runoff is slow to medium and sediment production is low. The hydrologic groups are mainly B (moderately low runoff potential) and C (moderately high runoff potential).

The principal native vegetation is pine, fir, spruce, and associated grasses, forbs, and shrubs.

These soils support mainly water-yielding areas, wildlife habitat, recreation and summer-home sites, and timber production.

Generally, soils of the project area are not significantly affected by wind erosion, produce low sediment-yield rates of less than 0.5-acre feet of sediment per square mile per year, and are nonsaline (less than 4 millimhos per centimeter of salt in the soil profile) (Wilson et al. 1975).

Within the project area, glacial scouring and deep till deposition formed the U-shaped valleys and interfluves. Till deposition, in the form of ground and lateral moraines, occur on the lower and intermediate flanks of the North Slope. Subsequent fluvial erosion sculpted the moraines into today's land surface of varying microrelief with hummocks, meadows, ridges, and ponds. Slopes are dominantly rolling to very steep.

The two alternative well sites considered in detail and associated roads traverse seven landtype-soil units (Figure 3-1 at the end of this chapter and Table 3-1) (USDA 1971):

1. B2-Wet Meadow Lands: these areas occur at an elevation of approximately 9,100 - 9,800 feet, have slope gradients between one and five percent, and occur in depressional basins and drainage ways. The soils are characteristically thick and clayey to loamy with high organic matter in the surface horizon. Erosion and stability hazards and reclamation constraints are low. However, the construction hazard potential is rated as high because of the high water table and low-bearing strength and high plasticity of the soil.

2. B3-Mixed Alluvial Lands: the B3 landtype is traversed approximately .5 mile southwest of the intersection of Stillwater Road and Peninsula Road. This landtype-soil unit occurs at approximately 8,500 feet, has slopes ranging between one and three percent, and is associated with the bottom terraces of annually flooded streams. The soils are very thin, are cobbly to sandy in texture, and are well-drained. Erosion and stability hazards are low; however, this is due to the coarse skeletal soils. Reclamation constraints were rated as moderate. The engineering problems of high-water table and annual flooding result in a high hazard potential.

3. M2-Deep, Glacial Moraine Lands: the M2 landtype occurs between 8,800 and 9,450 feet, has dominantly cobbly and well-drained soils, has slopes ranging between 20 and 45 percent, and are

located on lower and intermediate glaciated valley side slopes. Erosion, stability hazards, and reclamation constraints are moderate to low. The overall construction-hazard potential is low.

4. M3-Hummocky Moraine Land: M3 landtypes are located at approximately 9,450 to 9,600 feet, have slope gradients generally between 20 and 50 percent, and have soils with stony surfaces and well-drained cobbly, gravelly, and sandy loam profiles. These landtypes differ from M2 landtypes by having depositional ridges running parallel with the valley and lateral to each other. Between the short, steep-sloped ridges, gently sloping ground moraines occur with intervening depressional areas. Narrow drainages with wet meadows and ponds have developed in the depressional areas. Erosion, stability hazards, and reclamation constraints are moderate to low. The construction-hazard potential is moderate due to slumping susceptibility on steep slopes and in wet areas.

5. M5-Fluvioglacial Pediments: located between 9,600 and 9,800 feet, these landtypes have slope gradients ranging between three and five percent, have thin and gravelly soils, and occur on slopes controlled by an old erosional surface. Extensive areas have shallow water tables. Erosion, stability hazards, and reclamation constraints are moderate to low. The construction hazard potential is moderate. Extensive areas have shallow water tables.

6. M12-Shallow, Mountain Slope Lands: the M12 landtype is traversed at an elevation of approximately 9,600 feet between the Section 16 and Section 21 locations. Slope gradients dominantly range between 35 and 70 percent and the soils are thin, very gravelly and shallow to bedrock. These areas are glacially scoured upper side slopes of U-shaped glacial valleys and sloping lands adjacent to the Alpine Rock Lands. Slopes are smooth and weakly dissected with parallel drainages. Erosion, stability hazards, and reclamation constraints are moderate to high. Construction hazard potential is high due to steep talus slopes, long duration of snow pack, and moderately high avalanche hazards. Landslide potential is high on steeper slopes in seep areas.

7. T2-Fluvial Moraine Lands: the T2 landtype is traversed by the existing Peninsula Road. It is located between 8,560 and 8,800 feet, slope gradient ranges between 10 and 20 percent, and the land surface consists of hummocky and morainal deposits dissected by old outwash deposits. Topography is irregular with wet depressional areas and small streams. Soils are dominantly cobbly, well-drained, gravelly, coarse and loamy. Erosion hazard is low to moderate; stability hazard is moderate to high; reclamation constraints are moderate to low. General hazard potential is low; however, poor soil compactibility and high water table conditions are characteristic of depressional areas.

Slope Failure Slope failure was assessed by the USGS during a level 2 geologic survey (Figure 3-2). The material presented here was obtained from the Wasatch-Cache National Forest. Slopes within the project area appear to be stable for the most part. However, the slope failure hazard map depicts areas that have slipped and are detectable by surface expression. Areas of potential failure occur predominantly in Sections 16, 17, 20, and 21. The areas depicted as cross hatch in Figure 3-2 are subject to local rotational slope failures often related to small areas of water accumulation, large excavations (e.g., large road cuts), and on oversteepened slopes.

Water Resources

Ground Water

Minimal agency data regarding the ground water are available. However, rights for ground water are on file with the State of Utah, Department of Natural Resources, Division of Water Rights for three springs in

the Christmas Meadows area. Water rights in proximity to the project area are surface diversions of ground water -- three springs in or adjacent (west) to the Christmas Meadows summer home area (Figure 3-3, Table 3-2). These springs are approximately one mile east of the alternative well sites. The rights are held by the Forest Service to supply culinary water to the recreational residences.

TABLE 3-2
WATER-RIGHT OWNERSHIP, LOCATION, AND USE

Owner of Water Right	Location of Water Right	Uses of Water Right
Forest Service	North 500 feet, West 1,700 feet from Southeast corner Section 9, Township 1 North, Range 10 East Surface diversion	Domestic: 7 families
Forest Service	North 800 feet, East 100 feet from Southwest corner Section 10, Township 1 North, Range 10 East Surface diversion	Domestic: 12 families
Forest Service	South 1,030 feet, East 150 feet from Northwest corner Section 15, Township 1 North, Range 10 East Surface diversion	Domestic: 12 families

Farther from the project area, rights held by the Forest Service are on file for four wells located to the north and west of the Christmas Meadows recreation residence area. These wells range in distances of 1.5 to 6.5 miles from the project area. Three of these wells provide water to Forest Service campgrounds and one provides water to the ranger station. The wells range in depth between 41 and 258 feet.

The lithologic logs on file with the well records indicate that all of the wells are developed in the Quaternary alluvial deposits or the Bishops Conglomerate. Because of similarities between the lithologies of these two deposits, they are difficult to differentiate based on available logs. The springs also are likely developed in Quaternary alluvial deposits. Water from all of the springs and wells is tested minimally for culinary standards on a regular basis in accordance with state standards and the water meets culinary standards. More comprehensive data are not available regarding the quality or quantity of ground water for the area. Because of the lack of comprehensive data, Chevron has volunteered to conduct a water-quality monitoring program of the three springs twice each year. Samples have been and will be analyzed for, heavy metals, water temperature, suspended sediment, and dissolved oxygen.

Below is a brief summary of the available information on ground water associated with each of the geological units in the project area. The following discussion assumes that extrapolation can be made between the lithologies observed at locations described in the literature and the lithologies at the location of the proposed well.

Quaternary Alluvium Hood (1976) presents pump test data for the Quaternary deposits of the south slope. Hydraulic conductivity ranges from 2- to 1,800-feet per day (ft/d). The deposits located in mountain canyons range from 10- to 400-ft/d but are mainly in the range from 20- to 80-ft/d.

Tertiary Bishop Conglomerate The hydraulic properties of this unit are probably similar to the Quaternary alluvium because the lithologies are similar. The permeability of this unit is probably lower because it is well to moderately indurated.

Precambrian Uinta Mountain Group Red Pine Shale Little information is available regarding this unit but it is probably not a significant aquifer.

Pennsylvanian Weber Sandstone According to Hood (1976) pump test hydraulic conductivity data for the highly fractured Weber Sandstone near Vernal, Utah, ranged from 0.01 to 20 ft/d. Substantial artesian pressure has been observed in this formation on the south slope.

Mississippian Madison Limestone According to Hood (1976) the primary porosity of this unit is low. However, solution channels in the unit are known to transmit large volumes of water. Maxwell (1971) reports that on the south slope several streams discharge to this formation. Solution channels in the unit discharge to streams and springs. Dye tests conducted on those systems indicated approximately 20 percent recovery.

Permian Phosphoria Formation This unit reportedly yields some water in the Uinta Basin (Baker 1970). Water from this formation is thought to have invaded an oil reservoir in the Uinta basin. However, Feltis (1966) has speculated that this water is derived from the Weber Sandstone and has entered the reservoir through fractures in the Phosphoria.

Triassic Thaynes Formation This unit reportedly yields some water to a few wells and springs through fractures and solution openings in the Kamas/Park City area (Baker 1970).

Triassic/Jurassic Nugget Sandstone This unit yields water to wells in the Kamas/Park City area. Reported transmissivity data are generally low (65 $ft^3/d/ft$ but ran as high as 335 $ft^3/d/ft$).

Tertiary Wasatch Formation Feltis (1966) reports that the Wasatch Formation does yield water to oil and gas wells and springs in the Uinta Basin.

Cretaceous Mesa Verde Group This formation is reported to yield low quantities (1 gallon per minute) of water to oil and gas wells in the Uinta Basin (Feltis 1966).

Cretaceous Frontier Sandstone This unit is reported to yield low quantities (1 gallon per minute) of water to springs in the Uinta Basin (Feltis 1966).

Cretaceous Mowry Shale Dakota Sandstone No information was found in the literature regarding the hydraulic properties of these units.

Surface Water

Characterizations of the project area were compiled from USGS 7.5-minute topographic maps, Forest Service (1985), TEMPO (1981), Hansen (1975), Forest Service (1971) and Welder (1968). Water rights information was obtained from the State of Utah Division of Water Rights in November, 1991.

Prior to receipt of Chevron's proposal, discharge and water-quality data were not available for the project area as of November, 1991. The nearest stream gauge station is located on the West Fork Beaver River below Deer Creek near Evanston, Wyoming (USDI 1991), a distance of over 50 river miles with numerous tributaries. Stream-class designation data for the project area were obtained in November, 1991, from the Utah Division of Water Resources. Since that time a water sampling program has been implemented (see Appendix K) in order to gain base line water quality data prior to any potential construction or drilling activities. On October 21, 1992 and again on June 4, 1993, water samples were taken from three springs in the Christmas Meadows summer home area, and also from the Main Fork stream. Additional samples will be taken prior to construction and drilling activities in order to strengthen the base line data collected to this date (Evanston District files).

The data collected to this point indicates good water quality in a basically undisturbed system. The data collected during June 4, 1993, did detect oil and grease in the sediments of the Main Fork stream. The source is unknown at this time, however potential sources include naturally occuring substances in the native materials, decaying organic material, or from the vehicle crossing upstream of the sample point or even an anomaly from the laboratory. Future sampling will try to identify this source.

Sediment yield was calculated using The Pacific Southwest Interagency Committee (PSIAC 1968) Sediment Yield Procedure (Shown 1970, Renard 1980) instead of the Universal Soil Loss Equation (USLE) (Wischmeier and Smith 1978). Because the USLE is geared to agronomic soil disturbances in the midwest with frontal storm systems, it is not as well adapted to the project area. The PSIAC relies on site-specific parameters and can be adapted for site-specific analyses. The PSIAC is a qualitative estimate of overland flow sediment yield that has been effectively applied at a broad planning level in arid and semi-arid Great Basin and Colorado Plateau. However, it does not attempt to assess channel erosion and delivery or erosion from mass wasting processes.

The NEPA and the Clean Water Act of 1972 serve as the primary legislation that requires addressing potential impacts to water resources. In addition, water use and quality objectives of the State provide further direction. Wetlands are protected by Section 404 of the Clean Water Act, which prevents dredge and fill activities within areas considered to be "waters of the United States" or jurisdictional wetlands. Other legislation requiring that proposed Federal project actions be assessed for impacts to wetlands include Executive Order 11990, Protection of Wetlands (1977) and the Fish and Wildlife Coordination Act (1958). Wetlands were identified in the field using plant species as indication according to Reed (1988), and were classified according to the US Fish and Wildlife Service (FWS) - National Wetlands Inventory Classification System (Cowardin et al. 1979). The potential for rare plant species to occur in the area was identified from other evaluations of the area and from information compiled by the Utah TES Plant Interagency Committee (1991).

The project area provides headwaters for the Bear River that supplies water to portions of Utah, Wyoming, and Idaho. Principal water uses include irrigation, stock watering, recreation, wildlife and habitat for cold-water fish (salmonids) and in some tributaries, Bonneville cutthroat trout -- which is being considered for listing as a threatened and endangered species. Waters from the Bear River have their ultimate discharge in Great Salt Lake. The major local perennial streams, and their associated floodplains flow below and on either side of the proposed project: Hayden Fork flows northward on the west side while Stillwater Fork flows northward on the east side (Figure 3-2). Both of these water courses range from zero to 960 feet in elevation lower than the proposed road and alternative well sites. The Main Fork drains the Hell Hole area and is a low-order stream that crosses through the project area (Figure 3-2). Flow records are not available for the Stillwater Fork, Main Fork, or Hayden Fork as the USGS does not maintain gauges on them. Main Fork flows have been estimated at 7,000 acre feet per year and Stillwater flows have been estimated at 42,300 acre feet per year. Estimates were made by Rick Patton, Hydrologist, Wasatch-Cache National Forest. (Refer to the Fisheries section for additional information.)

Hayden, Main, and Stillwater Forks are designated class 3A and 4 streams (State of Utah 1988). All surface streams in the study area are protected by Utah's Anti-degradation Policy. As such, new point sources of pollution are prohibited and nonpoint sources are to be controlled through implementation of mitigation measures. Many small streams, lakes, ponds and marshes are located throughout the depressional and hummocky land surface in the project area. The location of these and other major surface water features are shown in Figure 3-4. Any new projects requiring surface (or ground water) allotments are required to file an application to appropriate water with the Utah Division of Water Rights.

Annual precipitation for the project area ranges between 22 and 40 inches. Summers are short and winters long and cold. Most precipitation occurs as snowfall during the October to April period, but the area also can be subject to local heavy thunderstorm activity during May to September (Wilson et al. 1975). Peak stream flow occurs as winter snowmelt runoff primarily during May to June (Whitaker 1969). Average annual runoff is approximately ten inches (USDI 1970).

Based on regional studies, Wilson et al. (1975) reported low sediment yield rates for the project area of approximately 0.5 acre-feet of sediment per square mile per year (acre-feet/square mile/year). Calculations of site-specific sediment yield were less than this, ranging from <0.1 acre-feet/square mile/year on relatively flat terrain with good ground cover to 0.39 acre-feet/square mile/year on steep slopes with 50 percent total ground cover (Figure 3-3).

Alternative Well Site A is located on hummocky moraine lands upslope of the Main Fork. Depressional areas hold ephemeral snowmelt ponds and wet meadows. Significant subsurface water movement likely occurs during snowmelt runoff. The proposed road would cross the Main Fork once and roughly parallel it for approximately two miles. In Section 17, the proposed road would pass immediately above a seep area adjacent to the Main Fork.

Alternative Well Site B is located on a relatively flat ridge top consisting of fluvioglacial deposits. One small first-order stream drains the area into Stillwater Fork at the northern side of the Christmas Meadows summer-home area. The stream is located approximately 1,200 feet north of the proposed well site. Extensive areas of the ridge top have shallow water tables resulting in large complexes of wet meadows. The proposed road uses the same proposed road as used to approach Alternative Well Site A. Between the two alternative well sites, the proposed road passes within approximately 400 feet of the stream draining the ridge top to Stillwater Fork. The Christmas Meadows summer-home area is the closest user dependent on water in the area.

Because of the lack of data, Chevron has started to conduct a water-quality monitoring program of stream water (see Appendix K).

Wetlands Two principal types of wetlands occur in the project area; riverine and palustrine (Cowardin et al. 1979). The riverine system includes the Main Fork, Stillwater Fork, and Hayden Fork creeks. These streams are classified as riverine, upper perennial, with rock bottom of boulders (R3RB2). Two palustrine types were identified for the area. Small potholes that contain water during the spring and early summer were classified as palustrine, unconsolidated bed of mud, and seasonally saturated (PUB3E). These wetland types contained very little vegetation. Wet meadows were classified as palustrine, emergent, persistent (upright plants), semipermanently flooded (PEM1F). Prominent species in these meadows, which are indicative of wetlands (Reed 1988), include arrowleaf senecio, bluejoint reedgrass, arctic rush, sedges (Carex spp.), elephantella (Pedicularis groenlandica) rush (Juncus spp.), and willow (Salix spp.). Alternative Well Site B is in this wetland type.

Wetlands were surveyed, delineated, and mapped in July of 1992 (Appendix J, Dames & Moore 1992), and evaluated with respect to proposed activities. Twelve wetland areas were found in the vicinity of the project.

Vegetation

The vegetation of the project area is described according to various discreet categories that are first recognized according to structural class (for example; forest, shrub, grassland), and secondly on dominant species that form types or communities within each structural class.

Dominant or characteristic species, relative density, and diameter at breast height (dbh), when a forest type is involved, form the basis for the type descriptions. This information is used as a framework on which to assess potential impacts from the proposed project. In addition to vegetation losses, the potential for sensitive and threatened or endangered plant species to be affected also is addressed in this section. Thus, vegetation issues include:

- loss of vegetation (habitat)
- effects on rare, threatened, or endangered plant species
- wetlands are addressed in the previous section, Surface Water

This assessment addresses vegetation resources in accordance with NEPA as specified by the CEQ. Threatened or endangered plant species are protected by the Endangered Species Act (1973, as amended). Moreover, the Forest Service has implemented a Threatened, Endangered, and Sensitive (TES) Species Action Plan to increase awareness of such species within the National Forest System lands of Utah.

Vegetation communities of the alternative well sites and roads were delineated and described from published literature, previous environmental assessments of the area, Forest Service information, and a September 26, 1991 field investigation. Data were recorded during the field investigation on dominant vegetation types, their landscape positions, and the characteristic species in the various strata (for example; tree, shrub, herbaceous) represented. The range in dbhs and heights were estimated for each tree species that occurred in a particular vegetation type.

The project area occurs within the Uinta Mountain floristic section of the Intermountain Region (Cronquist et al. 1972). Much of this area occurs above 10,000 feet elevation and culminates in several peaks above 13,000 feet. Extensive lodgepole pine (Pinus contorta) and Engelmann spruce (Picea engelmannii)-subalpine fir (Abies lasiocarpa) forests characterize much of the area, although acid-tolerant fen and bog species (Sphagnum, Vaccinium, Ledum, Kalmia) also are distinctive vegetation components (Cronquist et al. 1972). Pyrenaean sedge (Carex pyrenaica) is represented in the Intermountain Region only in this area, and Uinta parrya (Parrya rydbergii) and Uinta beardtongue (Penstemon uintahensis) are strict endemics to the Uinta Mountains (Cronquist et al. 1972).

Vegetation of the area between the Hayden Fork and the Stillwater Fork of the Bear River consists primarily of lodgepole pine forests, although aspen forests, Engelmann spruce-subalpine fir forests, and meadows also are present in the study area (USDA 1985, USDA 1981a). Lodgepole pine is considered the climax type on nutrient-poor quartzite tills above about 9,000 feet (USDA 1981a). "Climax" refers to a mature stage of vegetation (community) that develops in accordance with climate on a particular habitat of an area or site in the absence of disturbance such as fire, insect damage, windthrow, and actions of man. It has been postulated that soil conditions prevent Douglas-fir (Pseudotsuga menziesii) from eventually assuming a dominant role. Aspen becomes more prominent below 9,500 feet and on colluvial soils, often supplanting lodgepole pine.

Areas below about 9,000 feet along the Peninsula Road contain a mixture of lodgepole pine with scattered groves of aspen. Associated species of the aspen forests are Oregon grape and prince's-pine (Chimaphila umbellata). Lodgepole pine forests are characterized by small trees (four- to eight-inches dbh; height 35-

45 feet) along most of the proposed access road. The understory is generally sparse with grouse whortleberry (Vaccinium scoparium), greenleaf manzanita (Arctostaphylos patula), and Oregon grape the principal species. A wet meadow is skirted by the proposed road at about 9,400 feet. Dominant species of the meadow are bluejoint reedgrass (Calamagrostis canadensis), arrowleaf senecio (Senecio triangularis), sedges (Carex spp.), corn-lily (Veratrum californicum), and gooseberry (Ribes spp.).

Vegetation changes to a relatively mature Engelmann spruce-lodgepole pine forest where the proposed road crosses the Main Fork. The understory is characterized by arrowleaf senecio, bluejoint reedgrass, Richardson geranium (Geranium richardsonii), broad-leaf arnica (Arnica latifolia), and bluegrass (Poa spp.). Rocky slopes above the crossing of the Main Fork once again support a less diverse forest of lodgepole pine (six- to eight-inches dbh, 45- to 50-feet tall) with grouse whortleberry, bearberry (Arctostaphylos uva-ursi), and Fendler meadowrue (Thalictrum fendleri), the principal understory species. Small pot-hole ponds are scattered through this area, occurring on small plateaus that catch run-off water from adjacent slopes, or in association with seasonal springs. Most of these ponds were dry in late September.

The proposed road continues through lodgepole pine forests with a sparse understory of grouse whortleberry to Alternative Well Site A. Vegetation at the drilling site is comprised of a lodgepole pine-Engelmann spruce forest (6- to 14-inches dbh) on rocky soil. Grouse whortleberry and bearberry characterize the understory, but small (one- to six-inches dbh) subalpine fir also are present, indicating an eventual change to a spruce-fir forest type.

The proposed road to Alternative Well Site B extends through lodgepole pine forests that occur on steep slopes and thin, rocky soils. The understory consists of scattered grouse whortleberry. Small (six- to ten-feet tall) Engelmann spruce occur occasionally in areas where slightly more topsoil has accumulated.

Alternative Well Site B is located in two vegetation types. A mature lodgepole pine forest of large (8- to 16-inches dbh) trees occurs in the western one-half of the site. Understory species include grouse whortleberry, broad-leaf arnica, and wild rye (Elymus glaucus). This type grades into a meadow that is characterized by numerous shrub, grass and forb species, and by the presence of widely scattered mature lodgepole pine (up to 24-inches dbh). Prominent species include arrowleaf senecio, alpine timothy (Phleum alpinum), tall larkspur (Delphinium occidentale), bluejoint reedgrass, and sedge (Carex scopulorum). Other characteristic species include corn-lily, arctic rush (Juncus arcticus) and willow (Salix spp.). Surface water was present in the depressions of the meadow during the site visit.

Old Growth A list of parameters that generally define old growth is provided in the Forest Plan (pages IV-33 to IV-34). Old growth forests encompass the late seral stages of stand development and are distinguished by old trees and other structures attributes. These attributes, such as tree size, canopy layers, standing dead trees, and fallen trees generally define forests that are in old growth condition. The specific attributes vary by forest type. Ten percent of the forested acreage on the Wasatch-Cache National Forest has been designated as old growth habitat (Forest Plan map).

To date, the Forest has not completed an inventory (field review and mapping) of existing old growth stands; however, based on mapped topography and aerial photographs, areas have been designated and mapped for management of old growth. It is assumed that mature and over-mature stands encompass old growth stands.

Peninsula Road passes through stands of mature lodgepole pine for about 8,200 feet, and the reconstruction of the Main Fork Road and new road across the Main Fork stream would pass through about 5,400 feet of lodgepole pine stands. From Alternative Well Site A to Alternative Well Site B, the entire 9,000 feet of new road would pass through mature lodgepole pine stands.

A review of the Forest Plan old growth map reveals there is a stand designated for management of old growth straddling the existing Peninsula Road. The Table Top Prospect proposal did not create the problem, however it could potentially aggravate it by increasing traffic on the road.

The majority of the existing designated old growth stand (approximately 284 acres) is on the east side of the road. Approximately 25 acres lie on the west side of the road (Figure 3-5). It is preferable for an old growth stand to be a contiguous area and any replacement stands be made up of a similar type as the stand being replaced.

According to the capability classification maps developed for the Forest Plan, stands of timber of the same capability classification lie on the east side of the road and directly adjacent to the southern end of the existing designated old growth stand. In order to replace the 25 acres now separated from the larger portion of the stand, a "non-significant amendment" to the Forest Plan would be necessary.

Threatened, Endangered, and Sensitive Plant Species Based on previous environmental assessments for the area, and information compiled by the Utah TES Plant Interagency Committee (1991), several TES plant species have potential to occur in the Uinta Mountains of northeastern Utah (Table 3-3). Of these, the brownie ladyslipper is most likely to occur in habitats of the project area. The brownie ladyslipper's habitat is similar to that of the project area, but this species has only been observed in the Ashley National Forest east of the Wasatch-Cache National Forest. At the request of the Forest, Chevron conducted a survey in July of 1992, to determine whether or not brownie ladyslipper is present in the project area. The results of the survey (Dames & Moore 1992) indicated that the brownie ladyslipper is not present in the project area.

A Uinta beardtongue population of about 200 plants is known from the East Fork of Blacks Fork (T3N R13E Section 31) to the east of the project area. The habitat type of the Uinta beardtongue is open rocky areas of alpine tundra and spruce-fir communities on siliceous gravels. This habitat is usually at the higher elevation alpine tundra and spruce-fir communities. The project area is located primarily in montane lodgepole pine forests, but extends into the lower section of spruce-fir communities. No habitats of the Uinta beardtongue was observed in the project area during field investigations.

Although occurring in the region, Ute ladies'-tresses (Spiranthes diluvialis), a federally listed threatened species, was not expected to occur in the project area because the site is above the elevation range of this species (to 6,800 feet). Hooded ladies'-tresses (S. romanzoffiana) has been confused with Ute ladies'-tresses, but occurs at higher elevations (8,500 to 11,000 feet) in the Uinta Mountains and would be more likely to occur in the project area. This species is not currently considered sensitive (Utah Endangered, Threatened, and Sensitive Plant Field Guide 1991). No Spiranthes species were observed during the field surveys.

TABLE 3-3
SENSITIVE PLANT SPECIES

Species	Agency Status			Habitat and Soil Type	Comments
	Utah Natural Heritage Program [1]	U.S. Fish and Wildlife Service [2]	Wasatch-Cache National Forest		
Uinta beardtongue (Penstemon uintahensis)	G3/S3	3C	Sensitive	High elevation Alpine tundra and spruce-fir habitat and Limestone substrates/quartzite gravels	Unlikely to occur at elevations in the project area.
Uinta parrya (Parrya rydbergii)	G2Q/S2	None	Sensitive	Alpine tundra habitat	Unlikely to occur at elevations in the project area
Arctic poppy (Papaver radicatum var. pygmaeum	G5T1/S1	None	Sensitive	Alpine tundra habitat and shale substrate soil type	Unlikely to occur at elevations in the project area
Brownie ladyslipper (Cypripedium fasciculatum)	G3/S1	None	Sensitive	Spruce-fir & lodgepole pine habitat and forest duff soil type	Possible occurrence in the project area
Ute ladies'-tresses (Spiranthes diluvialis)	G2/S1	LT	None [3]	Poplar-willow habitat and alluvial valley soils	Unlikely to occur at elevations in the project area.

[1] The global rank (G-rank) is a reflection of the overall condition of a species throughout its range.

G1 = critically imperiled globally; endangered throughout range.
G2 = imperiled globally; endangered throughout range.
G3 = either restricted in range or very rare and local throughout its range; threatened throughout range.
G4 = apparently secure globally, though may be rare in parts of its range.
G5 = demonstrably secure globally, though may be rare in parts of its range.

Subspecies and varieties receive a T-rank attached to the G-rank, in which case the G-rank reflects the condition of the entire species and the T-rank reflects the global situation of the subspecies or variety.

The state rank (S-rank) is assigned in much the same way as the global rank but reflects only the status of the species as it occurs in Utah

[2] 3C = no longer under review (more abundant than previously believed and/or not subject to any identifiable threat)

LT = listed as a Threatened species under the Endangered Species Act of 1973, as amended.

[3] Not presently known to occur on the Wasatch-Cache National Forest.

Wildlife

The purpose of this section is to identify wildlife resources that may be affected by the proposed project. In addition to wildlife resources in general, specific attention is devoted to special-status species including State and Federally listed threatened and endangered species, Forest Service-sensitive species, and other species of special concern to the Utah Division of Wildlife Resources (UDWR).

The proposed project is located in the North Slope of the Uinta Mountains of the Wasatch-Cache National Forest. The project area occurs within the Rocky Mountain montane forest region and is characteristic of the Lodgepole Forest type. Dense stands of lodgepole pine (Pinus contorta) are the dominant forest feature with intermingled occurrences of other montane conifers including Englemann spruce (Picea engelmannii) and subalpine fir (Abies lasiocarpa). Quaking aspen (Populus tremuloides) also are present particularly in the more moist areas including the riparian habitats of the Main Fork, mountain meadows, and canyons.

The Main Fork drainage is comprised of a mosaic of vegetation patterns. It is predominated by a mixture or different age classes of lodgepole pine stands dissected in the bottom of the drainage by the Main Fork of the Stillwater river and its accompanying openings of wet meadows and riparian areas. Todays patterns are a result of the early tie hack days, some modern day logging in the Peninsula area, and natural succession (with the absents of fire). The area contains a variety of vegetation classes, ages, and types within the predominantly lodgepole area. Fragmentation is limited to the recent disturbance (10 years) is limited to the construction of the Peninsula road and the small timber sales which have occurred along the road. In some instances the small size of disturbance has increased the diversity of the area where that disturbance occurred in the dense lodgepole stands.

Actions potentially affecting wildlife resources are regulated by several Federal legislative acts. The Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.) as amended, provides FWS the authority to protect wildlife species designated as threatened or endangered. All migratory wild birds except European starlings, house sparrows, and rock doves, are protected by the Migratory Bird Treaty Act of 1976. The Bald Eagle Act of 1940 (amended in 1962) further protects bald eagles and golden eagles. Additional legislation affording protection to wildlife species and their habitat includes the Sikes Act, Title II (16 U.S.C. 670 et seq.) as amended, the Federal Land Policy and Management Act of 1976 (FLPMA) (43 U.S.C. 1701) and NEPA. Legislation directing wildlife management also exists at the state level. In 1971, the Utah legislature passed a Wildlife Resources Code that gave authority and charge to the UDWR to protect, propagate, manage, conserve, and distribute protected wildlife in Utah.

Contacts with Federal and State agency personnel, as well as a review of relevant literature and field reconnaissance were the primary sources of wildlife inventory data. Agencies contacted include the FWS, Utah State Office; Forest Service, Evanston Ranger District; UDWR; and Utah Natural Heritage Program. Appendix F contains letters to and from the FWS (October 18, 1991 and December 13, 1991) and Utah Natural Heritage Program (October 18, 1991 and November 15, 1991). The findings are presented in the following sections.

Riparian areas and other moist habitats are likely to support amphibious species. Amphibian species that potentially inhabit areas subject to effects of the proposed project include the tiger salamander (Ambystoma tigrinum), western toad (Bufo boreas), and northern leopard frog (Rana pipiens). Reptile species that may be present include the mountain short-horned lizard (Phrynosoma douglasi hernandesi), rubber boa (Charina bottae), gopher snake (Pituophis melanoleucus), and wandering garter snake (Thamnophis elegans vagrans) (UDWR 1979, Stebbins 1985, Whitney 1990).

Avian species known from habitats similar to those potentially affected by the project include various song birds, woodpeckers, raptors, and gallinaceous species. Characteristic song birds are the ruby-crowned kinglet (Regulus calendula), Cassin's finch (Carpodacus cassinii), pine siskin (Carduelis pinus), white-crowned sparrow (Zonotrichia leucophrys), gray jay (Perisoreus canadensis) and mountain chickadee (Parus gambeli). Hairy woodpeckers (Picoides villosus) are common and northern three-toed woodpeckers (P. tridactylus) may be present. Raptors include the great horned owl (Bubo virginianus), long-eared owl (Asio otus), red-tailed hawk (Buteo jamaicensis) and northern goshawk (Accipiter gentilis), saw-whet owl (Aegolius acadicus) and the pygmy owl (Glaucidium gnoma). Potential habitat may occur for the boreal owl Aegolius funereus) and flammulated owl (Otus Flammeolus). Blue grouse (Dendragapus obscurus), ruffed grouse (Bonasa umbellus), and morning dove (Zenaida macroura) are also likely species (Behle and Perry 1975, Hayward et al. 1976, Whitney 1990).

Various small mammals, predators, and large game animals use habitats similar to those potentially impacted by the proposed project. Representative small mammals include the northern pocket gopher (Thomomys talpoides), montane shrew (Sorex monticolus), red squirrel (Tamiasciurus hudsonicus), deer mouse (Peromyscus maniculatus), mountain cottontail (Sylvilagus nuttallii), and pine martin (Martes americana). Predatory species include the mountain lion (Felis concolor), ermine (Mustela erminea), coyote (Canis latrans), and black bear (Ursus americanus). Mule deer (Odocoileus hemionus), moose (Alces alces), and elk (Cervus elaphus) are cervids known to frequent the vicinity. Relative to these species, the proposed project site is located in an area that provides transition habitat and that also serves as a spring/fall migration route. The hoary bat (Lasiurus cinereus) and porcupine (Erethizon dorsatum) are additional species potentially found in habitats affected by the proposed project (Zeveloff 1988, Whitney 1990).

Special-Status Species

Special-status species include species that are currently listed, proposed for listing, or are candidates under review for listing as threatened or endangered by FWS under the Endangered Species Act; species considered special status or rare by UDWR; species considered sensitive by the Forest Service; and species for sport, commercial, or aesthetic value as determined by the appropriate agency. The only special-status species of concern associated with this project is the northern goshawk, a candidate for listing as a threatened and endangered species. A survey to determine the presence or absence of goshawk nesting was conducted during June of 1992 and June of 1993.

Federal and State codes are defined in Appendix G.

Threatened and Endangered Species The peregrine falcon (Falco perergrinus) and bald eagle (Haliaeetus leucocephalus), are listed as endangered species with both the FWS and UDWR. Within the bounds of the Wasatch-Cache National Forest, peregrine falcons are historically known from nest sites in cliffs along the Wasatch Front. Bald eagles, primarily winter migrants, are known to roost in canyon mouths along the Wasatch Front and the Stansbury Range (USDA 1985). No locations are documented for either of these species; however, they are known to occur within the proposed project area (USDI 1991, UDWR 1991a). No additional Federal- or State-listed threatened or endangered species are known to occur in the vicinity of the proposed project (USDI 1991, UDWR 1991a).

The proposed project is located in a lodgepole forest area, known habitat for the northern goshawk. This raptor is currently listed as a Federal Category 2 Candidate species (refer to Appendix D) and also has been classified recently as sensitive by the Forest Service for its Intermountain Region. They are known to exist within the vicinity of the proposed project area (USDI 1991, UDWR 1991a). One adult goshawk was observed at the confluence of the Hayden and Stillwater Forks of the Bear River on September 26,

1991 (Smith 1991). The sighting occurred approximately three miles downstream of the proposed project site. During a survey, conducted in June of 1992 (Appendix I), one active goshawk nest was found about 70 yards from the Peninsula Road in Section 5. The Peninsula Road runs through the 420 acre Post-fledgling Family Area (PFA) surrounding this nest. Since the survey was conducted for this project, one other northern goshawk nest was found by Forest personnel in a neighboring area (approximately one mile northeast), and a goshawk was observed in the Christmas Meadows area (which may imply another nest), indicating that a viable population of goshawks occupy the area. To many readers this may seem to indicate a rather sparse population when compared to other bird species. However, the area needed by the goshawk, especially during the nesting and post-fledgling periods, are quite large (refer to Appendix I). The goshawk will normally avoid other goshawk territories and space themselves accordingly.

Other Category 2 Candidate species that are known or suspected to occur in the Wasatch-Cache National Forest are the spotted bat (Euderma maculatum), North American lynx (Felis lynx), wolverine (Gulo gulo), Columbian sharp-tailed grouse (Tympanuchus phasianelius columbianus), and spotted frog (Rana pretiosa). Known locations for these species do not exist within the vicinity of the proposed project (USDI 1991, UDWR 1991a).

Sensitive Species With the exception of the bald eagle and peregrine falcon, all the species discussed above also are considered Forest Service-sensitive species. Other Forest Service-sensitive species known or suspected in habitats within the Wasatch-Cache National Forest are the Western big-eared bat (Plecotus townsendii), boreal owl (Aegolius funereus), flammulated owl (Otus flammeolus), three-toed woodpecker, and great gray owl (Strix nebulosa). However, according to Forest Service personnel, none of these species are known from the proposed project area (USDA 1991a). Surveys were completed in June, 1992, for the three-toed woodpecker and flammulated owl. Survey methods used some of the techniques described in the survey protocol established for the South West Region since none have been established for the Intermountain Region at this time. The exact protocol was not followed precisely since the need for, and extent of, field reconnaissance should be commensurate with the risk associated with the project and species involved, and the level of knowledge already at hand (FSM 2673.43).

There are several species classified as sensitive by the State of Utah that may occur in the general vicinity of proposed project. These species are the spotted bat, wolverine, North American lynx, and river otter (Lutra canadensis) (UDWR 1991b, McKay 1991a, McKay 1991b, Whitaker, Jr. 1980, Burt and Grossenheider 1976). The long-billed curlew (Numenius americanus), American white pelican (Pelecanus erythrorhynchos), and osprey (Pandion haliaetus) also may be observed (UDWR 1991b, National Geographic Society 1987, Udvardy 1977). No locations for any of these species are known to occur within the bounds of the proposed project (UDWR 1991a, USDA 1991a, Appendix I).

Management Indicator Species Management indicator species (MIS) are designated by the Forest Service and are "representatives" of other species that rely upon similar habitat components. The objective in managing for an MIS is that management for the one species successfully manages for the other species of that habitat type. Also, an MIS designation is intended to "recognize the habitat requirements of species that need special protection. Threatened, endangered, and sensitive species, economically or socially important species, species that have special habitat needs, and other species" are considered for MIS classification (USDA 1985). Per Forest Service personnel, the applicable MIS's for habitats potentially affected by actions associated with the proposed project are the gray jay and the pine marten (USDA 1991a). The gray jay is an MIS for mature subalpine fir-spruce-lodgepole pine habitats with understory (USDA 1985).

The pine marten have a low value as Ecological indicators because they are high on the food chain and are subject to changes in prey populations. The pine marten was selected as a High Interest species because of high public interest demonstrated during recent years (USDA 1985). Habitats within the

proposed project area and surrounding region are suitable to support the pine marten; however, specific locations for this species are unknown (UDWR 1991a).

Habitat for pine marten consists primarily of mature to old growth lodgepole pine, mixed conifer, and spruce/fir forests. They are thought to be sensitive to forest fragmentation, requiring blocks of at least 160 acres of continuous forest (Hargis, 1991). They will forage in openings less than 10 acres in size with a distance to cover less than 300 feet (Hargis, 1991). Martens have home ranges of approximately 640 acres. Minimum viable populations require 10 individuals, and optimum habitat required equals approximately 4,000 acres (Hoover and Wills, 1987).

Species of Special Concern Species of special concern are those species that the Forest Service or UDWR have identified as significant because of their economic or social values. Species with such values that are likely to occur in the proposed project area are moose, elk, and mule deer.

The general project area is located in known winter/summer transition habitat for moose, elk, and mule deer (USDA 1991a, UDWR 1991a). The lodgepole plateau that exists at Alternative Well Site A is part of an important spring/fall migration route for the above-mentioned big game species. The riparian areas associated with the Main Fork also are important components of this migration route (UDWR 1991a). The area of Alternative Well Site B is big game summer habitat as wetland meadows and migration route.

Fisheries

The project area is situated between the Stillwater Fork of the Bear River and the Main Fork of the Stillwater Fork. Alternative Well Site A is located about 0.5 mile to the east of the Main Fork and about 215 feet higher in elevation. Alternative Well Site B is on top of the ridge separating the Main Fork from the Stillwater Fork and situated at the headwaters of a small, unnamed, ephemeral tributary to the Stillwater Fork. This site is about 0.8 miles to the west of the Stillwater Fork and about 1,000 feet above it.

The Bear River drainage is situated to the west of Elizabeth Ridge and hence flows ultimately into the Great Salt Lake. Flow rates in the Bear River at the Utah-Wyoming state line have an annual mean flow of 194 cubic feet per second (cfs) averaging data from the past 50 years. The lowest daily mean recorded was 18 cfs in 1960. Flow records are not available for the Stillwater Fork, Main Fork or Hayden Fork as the USGS does not maintain gauges on them. During the September, 1991, reconnaissance survey, flows were visually estimated in the Main Fork and Stillwater Fork. At that time, which would represent low flow conditions, Main Fork was flowing at about 5 cfs while the Stillwater Fork was flowing at about 30 or 40 cfs. The ephemeral tributary of the Stillwater Fork originating near Alternative Well Site B had a poorly defined stream channel, indicating that it never has much water in it and that water flow is limited to the spring runoff period. At the time of the reconnaissance survey, the channel was dry.

The Stillwater Fork (stream number 160101-540, State catalog number IV AQ-260) is a high-quality trout-fishing stream characterized by long riffles, glides, and runs on cobble substrate. The State river class rating is 2 on a scale of 1 to 6 (class 1 being best and 6 being dewatered). The gradient in the project area averages about 1.0 percent and probably varies between 0.5 and 1.5 percent. Biological productivity is good with a Biological Condition Index (BCI) rating of 85 (expressed as a percentage of optimum). The BCI is based on the status of the macroinvertebrate community, which serves as the primary food source for trout. The Habitat Condition Index (HCI), which measures habitat quality, as determined by pool quality/quantity relationships, substrate composition, bank stability and gradient, is rated at 57 (57 percent of optimum). This probably reflects the long reaches of riffle/run and general lack of pools. Gamefish species known to be present include rainbow trout (Oncorhynchus mykiss) cutthroat trout (O. clarki), brook trout (Salvelinus fontinalis), and mountain whitefish (Prosopium williamsoni). Bonneville cutthroat

(Oncorhynchus clarki Utah), which are the native subspecies in this drainage, and are rated by the Forest Service as "sensitive", are not known to be found in the Stillwater Fork. However, Bonneville cutthroat have been found in two nearby streams (McKenzie Creek and Carter Creek). Colorado cutthroat trout and Bonneville cutthroat trout are candidates for listing as threatened and endangered species.

The Main Fork, (stream number 160101-540001, State catalog number IVAQ-260-A) is classified by the UDWR as 3B. This indicates this stream is characteristic of the majority of the fisheries in Utah and does have value as a spawning and nursery stream. A reconnaissance-level Forest Service survey indicated an HCI of 61 and an estimated BCI of 90. This indicates good food production, but a general lack of good holding water. The fisheries potential is generally low due to the steep gradient (between three and six percent). Otherwise, habitat quality is good with plenty of boulder pockets, large woody debris and abundant streamside vegetation. Gamefish species present are not documented, but probably include the same species found in the Stillwater Fork.

Air Quality

The Clean Air Act Amendments of 1977 (P.L.95-95) Section 162(a) classified areas and established standards. Also considered are the Clean Air Act Amendments of 1990.

Existing information was provided by the Air Quality Staff Officer, Wasatch-Cache National Forest Supervisors Office and Evanston Ranger District. No scientific data were available. There are no air-quality monitoring stations in the immediate vicinity of the project.

The Prevention of Significant Deterioration (PSD) portions of the 1977 Clean Air Act Amendments (P.L. 95-95) classified areas of the country as Class I, II, or III. Class I areas are all international parks, all national wildernesses and memorial parks greater than 5,000 acres, and national parks greater than 6,000 acres that existed on August 7, 1977, (P.L.95-95), Part C, Sec 162(a). All other areas (unless redesignated by the State at a later time) are Class II, including the High Uintas Wilderness. Class III areas are redesignated by the State to allow increases above baseline amounts. There are no Class III areas in Utah.

National Forest System lands, where the project site is located, are designated as Class II. This classification allows a specific maximum increase of sulfur dioxide, nitrogen dioxide, and particulate above a baseline concentration. Currently, there are no emission sources within or near the area.

The air quality within this project area is generally considered to be very good. The high elevation (about 9,600 feet) is above most potential pollutant sources and inversion problems. The air is currently free from all pollutant sources (Wasatch-Cache National Forest Analysis of The Management Situation for Forest Planning, April 1982). The area meets all Federal and State ambient air quality standards. Dinosaur National Monument (over 100 miles east by southeast of the current project area) is an area of special air quality concern. However, there are no Class I air quality areas nearby.

Wilderness

The High Uintas Wilderness Area was created with PL 98428 - The Utah Wilderness Act of 1984. This Wilderness area is about 460,000 acres and is located south and southeast of the proposed project and jointly administered by the Ashley and Wasatch-Cache National Forests. Hell Hole Lake is located within three miles to the south of the project area and just inside the Wilderness boundary. The Hell Hole Basin portion of the Wilderness is about 1345 acres or approximately 3% of the High Uintas Wilderness. Access is via trail which is located along the Main Fork. Visitor use (estimate and not firm count) was developed

by the Forest Service recreation staff and the Wilderness Ranger and is about 42 visits (each individual person is considered a visit each time they come to the area) resulting in 6 visitor days (a visitor day is an individual for a 12 hour period or 3 individuals for a four hour period) at Hell Hole lake. Use along the Main Fork is discussed in the Transportation and Recreation section later in this Chapter.

There are two prominent peaks over 12,000 feet in elevation located about 4 miles south of the project area. A-1 Peak (12,337 feet elevation) is located about one mile southeast of Hell Hole Lake. Kletting Peak (12,055 feet elevation) is located about one mile southwest of Hell Hole Lake.

The Wilderness characteristics, solitude, natural integrity, and remoteness are all present within this portion of the High Uintas Wilderness.

Roadless Character

This project area is located within a portion of the High Uintas Roadless Area (Figure 3-7). The High Uintas Roadless Area lies along the perimeter of the High Uintas Wilderness in Summit, Daggett, Duchesne, and Wasatch counties in Utah.

The term "roadless character" refers to an area of at least 5,000 acres, without development and maintained roads, and substantially natural. Roadless areas have varying degrees of wilderness characteristics. Wilderness is specifically defined in the Wilderness Act of 1964 (P.L. 88-577); one requirement is roadless, undeveloped condition, and roadless condition can be and is viewed by some as a resource worth protecting in its own right.

Roadless characteristics include: natural integrity, apparent naturalness, remoteness, solitude, special features, and manageability/boundaries and are defined as follows:

Natural Integrity - is the extent to which long-term ecological processes are intact and operating. Impacts to natural integrity are measured by the presence and magnitude of human-induced change to an area. This change includes physical developments as well as activity in the area.

Apparent naturalness - is an indicator of whether an area appears natural to most people who are using the area. There may be some human impact, but it would not obvious to the casual observer.

Remoteness - is the perceived condition of being secluded, inaccessible, and "out of the way." Topography, vegetative screening, distance from human impacts, distance from sights and sounds of man, and difficulty of travel all contribute to remoteness.

Solitude - is defined as isolation from the sights, sounds, presence of others, and the developments of man.

Special features - are unique geological, biological, ecological, cultural, or scientific features located in a roadless area. Areas or activities identified as "special to someone" through the scoping process also were considered.

Manageability/boundaries - relates to the ability of the Forest Service to manage an area to meet the size criteria for wilderness consideration (at least 5,000 acres) and maintain the five elements discussed above.

The Roadless Area Review and Evaluation program (RARE II) of 1979 was conducted to identify all lands exhibiting wilderness characteristics which could be considered for inclusion in the National Wilderness Preservation System.

Legal challenges to RARE II resulted in direction in 1983 from the Secretary of Agriculture for each National Forest to evaluate roadless areas as part of the Forest Planning process. The Forest Plan roadless re-evaluation was conducted in November of 1983. RARE II roadless areas were remapped correcting errors in the original mapping. Areas of existing development were removed from the inventory. This information was presented to the public in the Draft EIS that accompanied the Proposed Forest Plan. During that same time period wilderness bills for National Forests in Utah were introduced in Congress with the act signed into law September 28, 1984. Because of the passage of the Utah Wilderness Act, and the release language contained in that Act, the roadless re-evaluation was not displayed in the final plan.

Of the approximately 830,000 acres inventoried in this roadless area, Congress in the Utah Wilderness Act of 1984 established 460,000 acres of Wilderness and released the remaining acres (approximately 370,000 acres) for multiple use management in accordance with Forest Plan management direction. This remaining roadless acreage is composed of an area adjacent to the High Uintas Wilderness. While the roadless acres may not form a continuous ring, since all acres are contiguous to the HUW they are still considered as one roadless area unit. Of the 370,000 acres not designated as Wilderness, there are approximately 344,000 acres remaining as inventoried roadless acres.

The Main Fork drainage is one portion of the 344,000 acres of remaining roadless area covering the north and south slope of the Uinta Mountains as described in the previous paragraph. Strictly on the north slope portion of the roadless area on the Wasatch-Cache NF past activities have modified an estimated 12,000 acres, and reasonably foreseeable future actions are expected to modify an additional 3,500 acres. This equates to a total of 4 percent of the 370,000 acres of roadless area not designated as Wilderness or 20 percent of the 77,500 inventoried roadless area on the North Slope which has been or may be modified, exclusive of what would be modified as a result of this proposed project (USDA 1991a).

The Forest Service recognizes there are disagreements as to how well RARE II and the 1982 re-evaluation identified the areas having roadless characteristics. The maps produced during RARE II are of such a small scale that calculating acreage in the Main Fork drainage which were identified as having roadless characteristics is difficult. According to the RARE II map there are approximately 2520 acres of land within the Main Fork drainage having wilderness characteristics. This is estimated to be 400 more acres of having roadless character in the Main Fork drainage than what the 1983 re-evaluation identified. In addition to the area included in RARE II and the re-evaluation there are several additional areas that may be considered roadless by some interested publics. These areas include:

> The area East of the Roadless Area Boundary and the Stillwater Fork from the summer homes North to the confluence with the Main Fork.
>
> The area North of the Roadless Area Boundary to a line starting at the confluence of the Main Fork and the Stillwater Fork to the end of the existing Peninsula Road and ending at the Jeep Trail Ford on the Hayden Fork.
>
> The area West of the Roadless Area Boundary to the Hayden Fork.

Using this information a larger area (approximately 2645 acres or 125 more than RARE II) having roadless characteristics may be affected than that portrayed in RARE II or the re-evaluation. The area that may be affected the most by this proposal and not shown as roadless in earlier evaluations is the bottom of the Main Fork drainage and the area directly South of the end of the existing Peninsula Road. This larger area

will be analyzed as to how the roadless character will be affected using the roadless characteristics previously described.

Natural Integrity

The area's natural integrity is moderately high. Evidence of man's activities is quite common throughout the drainage, however most of it is associated with past logging operations which took place around the turn of the century. Remnants of roads, a log flume, cabins, a dam, old stumps, and small decks of cord wood still exist although in advanced stages of decomposition. The approximate 90 years of regrowth since these operations took place have obscured some of the roads and have reforested the old cutting units. Salvage operations and years of neglect have reduced most of the log flume to almost preexisting conditions. All of the roofs on the cabins have long since fallen in and the walls are not far behind. The main access road used during this time was still used by motorized wheeled vehicles until just recently.

Apparent Naturalness

Once the mouth of the Main Fork is entered, the appearance of the area is mostly natural. As stated above, there are remnants of past development, however most of these are in advanced stages of decomposition and have a way of blending into the natural background. Many of these developments are not obvious to the casual observer except for the old road which runs along the Main Fork stream and was still used by motorized wheeled vehicles until just recently.

Remoteness

The two ridges forming the sides of the Main Fork drainage effectively screen out the sights and sounds associated with Highway U-150 and the Stillwater Road thus maintaining a sense or feeling of remoteness within this drainage.

Remoteness is diminished somewhat in that area lying west of the Main Fork drainage especially as one gets closer to Highway U-150. Stands of timber would still generally screen the highway from view and the sounds of the Hayden Fork River, which parallels the highway, would help mask sounds of traffic. However, there will be locations within the area where sight and sounds would still be noticed.

The ridge top which defines the east side of the Main Fork drainage is relatively flat. Remoteness on top of this ridge is generally high, however it diminishes as one proceeds down the east slope of this ridge and nears the Stillwater Road or the Christmas Meadows Summer Home area.

Solitude

Within the Main Fork drainage, the isolation from the sights, sounds, presence of others, and the developments of man, is quite high. This is the access route used to gain entrance to the Hell Hole area within the Wilderness and other visitors may be encountered, however, use is quite light. There are remnants of past timber harvesting. These remnants are in advanced stages of decomposition and, in many opinions, add to the character of the area for some visitors.

Solitude is diminished somewhat in that area laying west of the Main Fork drainage especially as one gets closer to Highway U-150. Stands of timber would still generally screen the highway from sight and sound, however, there will be locations within the area where sight and sounds would still be noticed.

The ridge top which defines the east side of the Main Fork drainage is relatively flat. Solitude on top of this ridge is high, however it diminishes as one proceeds down the east slope of this ridge and nears the Stillwater Road or the Christmas Meadows Summer Home area.

Special Features

The Howe Flume Historic District extends into the Main Fork drainage and the area having roadless character. Only remnants of roads, cabins, a log flume, a dam, and piles of cord wood remain. All of these are in advanced stages of decay.

Other "special features" relate to the area's contribution to the Forest's roadless resource. Visitation to the Main Fork drainage, as described later in this chapter, is relatively low, however, this contributes to the "special feature" valued by those who do visit this area. The relatively obscurity, lack of any formal trailhead or directional signing, makes the drainage a special area for those seeking solitude and a primitive experience in an undeveloped setting.

Manageability/Boundaries

In our opinion, that portion of the Main Fork drainage beginning at the end of the existing Peninsula Road and extending south to the Wilderness boundary has roadless characteristics. This drainage lies within a larger area having roadless characteristics which is bordered by the Hayden Fork River and Stillwater Fork/Christmas Meadows Summer Home Area on the west and east and by the Peninsula area and the Wilderness to the north and south. Being directly adjacent to the High Uintas Wilderness, this entire area meets the size criteria for wilderness consideration. The two rivers would help simplify boundary location. Identifying impacts to an area's roadless character using the characteristics just described is very subjective and varies with personal values.

A portion of the roadless area (800 acres) is designated as Semiprimitive Nonmotorized (SPNM) in the Recreation Opportunity Spectrum (ROS) for the Wasatch-Cache Forest Plan (IV-30, Map #5). This SPNM area is approximately one mile further south of the proposed project and adjoins the Wilderness.

Access is provided at many points along the perimeter of the roadless area usually along one of the north-south drainages.

The Utah Wilderness Act of 1984 and Congressional records provide direction for designation of the lands to be included in the High Uintas Wilderness in Section 102(a)(5) of the Act. Congress "determined" and "directed" in Section 201(b)(3)(d) that "areas...not designated Wilderness upon enactment of this Act shall be managed for multiple use..."

The House report states:

> **"The Forest Service's boundary on the north slope from the East Fork of Black's Fork west to Hell Hole Lake was pulled back in order to exclude areas of keen interest for oil and gas exploration and possible development"** [emphasis added]. "In making these deletions, the Committee would emphasize that the deleted lands have excellent wilderness potential (they

comprise some of the lands most readily accessible to residents of the Salt Lake City area and contain several popular trails) and that oil and gas activities should be conducted in such a manner as will minimize environmental disruption and protect wildlife and recreation values. In the event that oil and gas exploration indicates a lack of commercially valuable hydrocarbons in the area, the Committee believes a future Congress may wish to reconsider the wilderness potential of these lands."

The Senate report states:

> "The Committee also notes that the southern flank of the Rocky Mountain overthrust belt extends into the north slope region. **The geologic feature may contain substantial oil and gas deposits. The Committee anticipates substantial exploration and possible development of those resources north of the wilderness boundary** consistent with the National Environmental Policy Act and other applicable law" [emphasis added].

Wild and Scenic Rivers

Consideration of potential Wild and Scenic Rivers is an inherent part of the ongoing land and resource management planning process (Forest Service Manual 1924). Forests must evaluate each river to verify if it meets the eligibility criteria specified in the Wild and Scenic Rivers Act (free-flowing and have one or more "outstandingly remarkable" values). If the river is eligible the river's potential classification (wild, scenic, recreational, or a combination thereof) must be determined. The next step is the suitability evaluation which determines whether or not the river will be managed as a wild or scenic river. Until the suitability analysis is complete the river corridor must be protected to maintain those values that qualified it as eligible.

Wild and Scenic Rivers were evaluated during preparation of the Wasatch-Cache Forest Plan approved in 1985 and it did not propose any rivers for further study as National Wild and Scenic Rivers. (Final EIS for the 1985 Forest Plan, page IV-55). Since the time period when the Forest Plan was approved the philosophy for river eligibility assessment has evolved and the Forest has started working on a Forest Plan revision including a re-analysis of potential Wild and Scenic River eligibility across the Forest. The Wasatch-Cache has recently released an inventory based on an eligibility evaluation (USDA 1993).

For a river to be judged eligible it must be free flowing in character and possess one or more outstandingly remarkable value. The two rivers considered in the eligibility evaluation that are potentially affected by this project are the Main Fork and the Stillwater Fork of the Bear River. While both rivers were found to be free-flowing, only a six mile segment of the Stillwater Fork of the Bear River from the mouth to the wilderness was determined to be outstandingly remarkable because of its scenic quality.

To be judged outstandingly remarkable a value must be uncommon or extraordinary when compared to similar values within the state or region. The Stillwater Fork river corridor contains spectacular photographic/scenic opportunities, particularly the view south from Christmas Meadows towards Amethyst Basin. The view is frequently photographed and painted by western artists, and is distinctive in the region.

Potential Classification: The potential classification of an eligible river is based on the condition of the river and the adjacent lands at the time of the eligibility evaluation. About 3.7 miles of the Stillwater Fork have been classified as scenic and the remaining 2.3 miles classified as wild. Scenic rivers are defined as rivers that are free from impoundments, with shorelines or watersheds still largely primitive, but accessible in places by roads, while wild rives are essentially primitive and generally inaccessible except by trail.

Interim Management: Forest Service regulations provide direction for interim management for rivers found eligible for wild and scenic river designation. River corridors should be protected so that free-flowing characteristics are not modified, the outstandingly renmarkable values are protected, and the river and the corridor are not modified to the degree that eligibility or classification are affected.

Land Use

This section provides information about the existing condition of the environment in the project area with regard to the transportation system, recreation, and range land.

Specific issues related to land use are: concern about the safety of the general public on the Stillwater Road, disruptions to the users of the 4WD road and trail to Hell Hole Lake, and snowmobilers on the Mirror Lake Highway.

Contacts were made with land and mineral, recreation, and range conservation staff of the Evanston District, Wasatch-Cache National Forest to obtain existing data. The EA for the AMOCO Proposed Oil and Gas Exploration Drill Site and Access Road, Stillwater Fork Unit Area, was reviewed. The project site was visited on two different occasions by the resource specialist.

Transportation and Recreation

The main access to the area is provided by State Highway 150, (Figure 3-5) more commonly known as the Mirror Lake Highway, from Evanston, Wyoming, about 33 miles to the north, and Kamas, Utah, 45.5 miles to the southwest. Forest Road No. 057 (Stillwater) provides access (0.8 mile) from Highway 150 to the turnoff to the Peninsula area. The road is occasionally graded and is drained by a ditch. Vehicles can pass by reducing speed; except for large vehicles, which must pull to the side in some segments.

Approximately 2.1 miles of Forest Road No. 306 (Peninsula) provides access between Stillwater Road and the Peninsula area. This road varies between 12 and 16 feet in width. Vehicles must pull over to the side in order to pass. This road provides access for various timber harvesting operations in the Peninsula area. This road is closed to the public and access is by permit only. A gate is maintained at the crossing of the Stillwater Fork to control access.

The Mirror Lake Highway is heavily used by recreation visitors during the summer months from May until November with July and August being the peak season of use. Snow is not plowed from a portion of this highway during the winter months and it is closed near the Bear River Service Station by a gate. A trailhead for snowmobile users is maintained near this gate adjacent to the highway. The winter maintenance of the highway is the responsibility of the State Department of Recreation in Rockport, Utah. The Department of Recreation grooms the highway as a snowmobile trail from the gate closure to another gate closure near Kamas, Utah. There are approximately 220 recreation visitor days (RVD) of use by snowmobilers between the Forest boundary and the Bald Mountain Pass, a distance of about 17 miles. This use occurs during the winter months from the time there is adequate snow cover until the spring snow melt. The snowmobile parking lot at the Forest boundary is estimated to receive about 1,170 visitors who account for about 390 visitor days. These snowmobile users purchase supplies from the Bear River Service Station.

The Stillwater Road receives substantial use by recreation visitors traveling to the Christmas Meadows Recreation Residence (summer homes) area, Christmas Meadows Campground, and the Stillwater Trailhead. This trailhead provides parking for users on one of the most heavily used drainages in the High

Uintas Wilderness. The Christmas Meadows area provides excellent fishing, site seeing, and dispersed camping opportunities in addition to the activities mentioned above. Winter recreational activities such as snowmobiling and cross-country skiing occur extensively along the Stillwater Road up to and around Christmas Meadows. The existing Recreation Opportunity Spectrum (ROS) is Roaded Natural Appearing (RNA) (Figure 3-6) and the Forest Plan management objective is RNA.

Peninsula Road provides access for various timber harvesting operations in the Peninsula area. This road is closed by a gate to prevent general public access. The ROS classification is semiprimitive nonmotorized. The Forest Plan ROS management objective is RNA. The area north of Peninsula Road between the gate and the Stillwater Road contains about six dispersed recreation sites.

There is a 4WD trail that enters the project area from Highway 150 near the Gold Hill Road (Figure 3-6). Although this trail has been closed in the existing Travel Plan, no physical barriers have been installed and as such has been used until just recently by 4-wheel drive vehicles. Signs have been posted this past summer season (1993) closing the road. This 4WD trail ends at the section line between Section 8 and 17. The use of the 4WD trail as estimated is about 25 vehicles per year. From that point, there is a pack trail to Hell Hole Lake approximately three miles to the south and just inside the High Uintas Wilderness. Some limited dispersed camping has occurred along the 4WD trail and Hell Hole Lake receives light recreational use. The area in the vicinity of the 4WD trail is inventoried as Semiprimitive Motorized (SPM) to the location of the proposed bridge crossing on the Main Fork, from there to the wilderness boundary is Semiprimitive Nonmotorized (SPNM). Recent signing efforts may change the inventoried recreational use along the 4WD trail as SPNM. The Forest Plan management objective is RNA. The Travel Management Plan for this area is currently being revised and will determine if this 4WD trail should remain closed to motorized vehicles.

Recreation use in the Main Fork drainage is light. The following use figures (estimates and not firm counts) were developed by Forest Service recreation staff and the Wilderness Ranger and were included in the 1991 Recreation Information Management System use report.

Type	Visits	RVDs
trails	60	4
lake (Hell Hole)	42	6
stream	36	3
general undeveloped areas	31	52

The project area is all within Road Management Unit (RMU) #436. The road density as stated in the Forest Plan (IV-101) is 0.8 mile per square mile. Roads which were open to motorized vehicle traffic during development of the Forest Plan were used to calculate the density figure (1977 Travel Plan). The prescription in the Forest Plan is to manage as Roaded Natural Appearing (Refer to Map # 5, Forest Plan).

An effort was completed to recalculate the number of roads/trails open to motorized vehicles and the current road density (District Files). There have been several projects since the Forest Plan has been in affect which included road/trail construction and potentially could effect the road density.

There are some differences between what was found and the figures in the Forest Plan. Total miles of motorized road/trails - 26.1; miles behind locked gates - 5.0; miles open to general public (including Main Fork 4WD trail) - 21.1 (1.1 difference between this and the Forest Plan); total area of RMU 436 - 50 square miles; road density - 0.42 miles per square mile (this is approximately half of what the Forest Plan says).

The Forest Wide Standards and Guidelines (IV-43) require any new roads constructed within the unit will be obliterated or gated, or an equal amount of road will be obliterated or gated.

There is approximately 1.7 miles of gated road in the Peninsula area. The jeep trail from the ford across Hayden Fork to the end of the jeep trail in the Main Fork is approximately 2.4 miles long. It would take approximately 2.0 miles of new/relocated road to reach between the new bridge on the Main Fork and the end of the Peninsula Road.

Range

The project area is located within the Stillwater Sheep Allotment, which covers the entire Hell Hole drainage and portions of the Stillwater Fork. Approximately 1,200 head of sheep are authorized to graze this area for about 60 days each year from July 11 through September 10. No cattle grazing is permitted within the project area.

Suitable sheep range is very limited within the immediate (one quarter mile) vicinity of the proposed road and Alternative Well Site A. This limitation is caused by the dense stands of lodgepole pine, which limit growth of browse and grass species. The area is used as a "pass through" for the sheep to gain access to the higher country in the Hell Hole Lake area. Noxious weeds are not currently a problem within the project area.

Timber

Existing information was provided by the Timber Staff Officer, Wasatch-Cache National Forest. The Forest Plan, and the Analysis of the Management Situation (AMS) April 1982, and the Forest planning records were reviewed.

The Forest Plan (Forest Plan Map No. 2 Management Areas) shows a timber sale programmed in Sections 19, 20, or 21 of the project area. This sale is shown as number 19 on Map No. 2. The Forest Plan, page IV-374, provides the following information related to this programmed sale. It is scheduled for fiscal year 1992 and is referred to as Main Fork Bear. The projected volume is 2.5 million board feet of lodgepole pine timber covering 385 acres. Currently, no access exists to the area of this programmed sale. Although it was identified in the Forest Plan, it is not currently on the five year timber action plan and will not be implemented before the next revision of the Forest Plan which will reevaluate suitable timber stands and identify a 10 year timber activity schedule. No units have been located or roads located. Analysis is very specualative at this point since this sale is not definite.

Although the proposed Table Top Prospect project and the Main Fork Timber Sale are not dependent on each other, a road constructed into the Main Fork drainage could make the timber sale more feasible (the Forest Plan predicts the sale would need three miles of constructed roads). As such, the Main Fork Timber Sale could be a reasonably foreseeable activity. The cumulative effects of this activity will be disclosed.

Timber working groups (those parts of a forest that have generally the same silvicultural management and rotation) were obtained from the Forest Plan planning records and shown on Figure 3-8. The timber working groups were identified on maps entitled "Capability" in the Forest Planning Records. This mapping process for developing timber working groups was broad categories and did not include small (about 50 acres) pockets of meadows, wetlands, or riparian areas. For Forest planning, slopes over 40 percent were considered unsuitable for timber management because of higher management costs and potential soil erosion problems. The purpose of this mapping was to calculate allowable-sale quantity and not for site-

specific analysis. However, it does show the effects on the timber program caused by the proposed project.

The existing Peninsula Road traverses about:

- 8,200 feet of mature lodgepole pine without an understory on slopes less than 40 percent, Type 063
- 400 feet of willow on slopes less than 40 percent, Type 340
- 900 feet of post and pole quality lodgepole pine stands on slopes less than 40 percent, Type 070
- 400 feet of forbs (meadows), less than 20 percent slope, suitable rangeland

The relocated and new road to Alternative Well Site A traverses about:

- 9,400 feet of post and pole stands of lodgepole pine on slopes less than 40 percent
- 5,400 feet of mature lodgepole pine stands with an understory on slopes less than 40 percent

The Alternative Well Site A would occupy post and pole stands of lodgepole pine on slopes less than 40 percent. Type 070 and Type 068 lodgepole pine, less than 40 percent slope, suitable for timber, mature condition.

The relocated and new road from Alternative Well Site A to Alternative Well Site B would traverse:

- about 2,200 feet of mature lodgepole pine stands without an understory on slopes greater than 40 percent, Type 098
- about 4,800 feet of mature lodgepole pine stands with an understory on slopes less than 40 percent, Type 068
- about 2,000 feet of mature lodgepole pine stands without an understory on slopes less than 40 percent, Type 067

Alternative Well Site B also would occupy an area of mature lodgepole pine, Type 067.

Fire Management

No issues related to fire management were identified during scoping. However, effects from fire are a concern expressed by the Forest Service.

Existing information was obtained from the Fire Management Staff Officer, Wasatch-Cache National Forest Supervisors Office and Evanston Ranger District. The EA for the AMOCO Proposed Oil and Gas Exploration Drill Site and Access Road, Stillwater Fork Unit Area was reviewed. No new data were collected.

Historically, the occurrence of fire within the project area has been minimal. Within the past ten years, no fires have been reported. However, fire hazard is increasing as trees die from insect infestation. Within the Peninsula area, access exists and these insect-killed trees have been harvested each year. The slash produced during the harvesting is piled and burned in the fall to reduce fuel buildup and the increased potential fire hazard.

Socioeconomics

Forest decisions regarding resources can affect people's lifestyles, attitudes, and career options. In general, changes in resource management practices are most important to forest users and neighboring residents, but often other, more distant publics also are interested in or affected by changes in natural resource management. The geographic area potentially most affected by the proposed action includes most of Uinta County in Wyoming and adjacent Summit County in Utah. The concept "zone of influence" is often applied to such an area.

Resource decisions for the project area that change local revenues generated from National Forest activities would affect Summit County, where the entire analysis area is located. Decisions that change the number and types of jobs available, the level of local business activity, or the demand for public facilities and services would most affect Uinta County, whose communities are within easy commuting distance of the project area. Decisions to substantially alter the uses of the area may interest a much larger public, including many residents of the Great Salt Lake basin and more distant places outside of the zone of influence identified above.

Data for the baseline socioeconomic study were gathered principally from governmental agencies and augmented by other sources where possible. Demographic statistics were drawn from 1990 Census Bureau information whenever possible, and from materials released by the Demographic and Economic Analysis Section of Utah Office of Planning and Development (UOPD), and the Division of Research and Statistics of the Wyoming Department of Administrative and Fiscal Control (WDAFC). Quantitative data regarding economic activity within the two- county project area were obtained once again from the aforementioned agencies plus the Utah Department of Employment Security (UDES) and the Wyoming Department of Revenue and Taxation. County auditor's and clerk's offices were contacted for information regarding County and local revenues. Further tax information was acquired through the Utah Foundation.

Information on traditional lifestyles, the oil and gas boom, and tables displaying population and employment can be found later in this Socioeconomic section.

Potentially Affected Utah Communities

The proposed exploratory well would be located in the rural environs of northeastern Utah along the northern slope of the Uinta Mountains. The two alternative well sites being considered, within approximately .5 mile of each other, are approximately 12 miles south of the Utah-Wyoming border. Although the project area is located in Summit County, the High Uintas Mountains are an effective barrier between this area and the remainder of the county, especially during long winter seasons. Access to the proposed site would be from the Mirror Lake Highway (Utah/Wyoming 150), which connects the project area with the City of Kamas to the southwest about 45.5 miles, and with Evanston, located in Uinta County, Wyoming, about 33 miles to the north. However, since the Utah portion of Highway 150 normally is closed from the beginning of November until late May, access is restricted from the west. Besides the above-mentioned cities, other localities within a geographic area, which potentially could be affected by the proposed project, include the City of Coalville in Summit County.

Potentially Affected Wyoming Communities

Communities within Uinta County are most likely to be affected by management decisions which alter existing resource uses in the project area. Four communities are within daily commuting distance of the project area and changes in timber harvest policies, grazing allotments, access for oil and gas activities, and recreation opportunities would affect some residents. Oil and gas development has the greatest potential for generating changes because of associated population increases and related effects.

Evanston

Evanston was settled in 1869 to support construction and maintenance of the Union Pacific Railroad. Local residents supplied railroad ties, coal for the locomotives, and labor for the maintenance shops. The city soon became the county seat, a market center for ranchers and miners, and the site for a state hospital.

The switch to diesel engines and other trends diminished Evanston's importance as a railroad center and the city's population was just 3,863 in 1950.

Around 1975, petroleum exploration around Evanston intensified, and by 1977 oil and gas production and associated construction projects occurred on a large scale. Evanston became the center of operations for the Uinta County portion of the Overthrust Belt. The economic and social repercussions of rapid growth were at first overwhelming. The city needed time and money to make the necessary adaptations. By 1979, local tax and other revenues had increased substantially, Federal and State loans and grants were available, and the Overthrust Industrial Association contributed additional funds to enlarge and improve community facilities and services. The new city and county facilities in Evanston included county buildings, a city hall, school buildings, new streets and an overpass, and an expanded business district. A housing boom ensued, new subdivisions were opened, and water and sewer systems were expanded. Community leaders anticipated more growth than occurred and in many cases the new facilities now have surplus capacity. Uinta county and Evanston city officials believe that modest growth today would be manageable and would not overload public facilities and services.

Other Communities

Two communities in the east half of the county, Lyman and Mountain View, also had rapid growth resulting from the petroleum boom. Lyman's population increased from 643 in 1970 to 3,012 in 1980. Each city responded to the need for expansion and, like Evanston, sought outside assistance. Each acquired new public buildings, improved utilities, and new retail outlets. City officials in each location say they are now in a position to accommodate moderate additional growth, should it occur. A third small community, Robertson is only about 20 miles from the project area.

Public Preferences for Management of the Project area

At least three different perceptions of the natural resource values of the project area and its optimal uses are evident in scoping responses and in subsequent contacts with interested and affected publics. Strong public support exists for each of these points of view and proponents of each provide evidence to buttress their positions.

Priority to Consumptive Activities

One segment of the public stresses the importance of untapped commodity resources in the project area. Initial studies of the geology of the area suggest a good potential for oil and gas. They point out that the United States has been importing a growing share of oil and some of its natural gas for the past three decades and that, in a time of international crisis, some of our supplies could be in jeopardy. They also cite the need to reduce our balance of payments deficit.

The project area is above the Overthrust Belt which has proven oil and gas potential. Supporters of petroleum development state that modern exploration, processing, and marketing technologies permit development to proceed with little harm to the physical and biological environment, while providing the economic benefits discussed above.

Aside from oil and gas companies and their suppliers, many local business people and public officials endorse oil and gas development in principle, because of the increased employment, business activity, and revenues it can bring to counties and communities. However, some of these same individuals are also

environmentally aware, recognize the potential social and environmental impacts of such development, and favor using discretion in deciding where and how much development is acceptable.

Priority to Environmental Protection and Preservation

Environmental groups and some concerned citizens find the project area to be unique, and an ideal location for wildlife and recreational pursuits. Most people sharing this perspective are from outside of the immediate area of influence, chiefly from the Salt Lake urban area, but also from more distant points. Many periodically visit the area for recreation or as an escape from urban life, while others simply regard the area as one of the last remaining natural areas of this country that is both spectacular and relatively unspoiled. In their view, oil and gas should be extracted elsewhere, where environmental costs are less. In their communications they cite examples in other sections of the North Slope of damage to streams and other surface resources from petroleum operations, timber cutting, and the use and misuse of vehicles for recreation in unroaded areas. They recommend that the project area be designated as either a wilderness area or as a Semiprimitive Nonmotorized area.

Some who support this viewpoint are conservationists who think the United States is a wasteful nation. Why, they ask, should 5% of the world's people use 34% of its oil and gas? Even though oil and gas is needed, they argue, better solutions to future energy needs lie in less aimless waste, more energy-efficient technology, alternative fuels, and even family planning. They also cite the need to preserve natural resources for future generations, who may have the improved technology to remove energy resources with fewer adverse impacts.

Protecting wildlife and preserving habitat are major concerns of these citizens. The North Slope hosts numerous elk, deer and moose, and lesser numbers of bear, lynx, mountain lions, pine marten, and cutthroat trout. The drainage is said to be well suited for wildlife habitat.

Priority to Recreation and Restricted Traditional Uses

A third large segment of the public favors some combination of uses for the project area, generally avoiding activities (i.e., oil field development or large-scale timber harvesting) with a potential for adverse environmental impacts. These people tend to emphasize the scenic values and varied recreation potential of the area and favor expansion of opportunities for both nonmotorized and motorized recreation. Important management objectives for these people are improved access and enhanced opportunities for camping, hunting, fishing, off-road vehicle use, and enjoyment of the outdoors.

Some of these respondents stated that oil and gas development is acceptable if restricted to areas where they are now established. They indicated that some of the undesirable impacts of oil and gas development could be avoided if all operations were planned and conducted on an environmentally sound basis, with adequate mitigation to prevent erosion, protect water quality, and improve wildlife habitat.

Demographics

The population of Summit County, Utah, increased by 52.2 percent over the ten-year period between 1980 and 1990 while Uinta County, Wyoming increased by 42.6 percent. This dynamic growth is attributable to different factors for each county. Most of the population increase within Summit County occurred over the western portion of that jurisdiction with the emergence of the Park City area as a major international ski resort destination and with increased demand by Wasatch Front commuters for nearby housing in a

rural/alpine environment; whereas, much of the increase within Uinta County was associated with the energy-related petroleum "boom" cycle of the late 1970s and early 1980s. While the project communities of eastern Summit County grew slightly at 1.5 percent over the decade, the Uinta County communities recorded a 49.9 percent growth rate for the same period (UOPB 1991a; WDAFC 1991b). However, unlike its Utah counterpart, intercensual population estimates for Uinta County peaked in 1985 and the Wyoming communities, along with the County, declined in population thereafter (University of Utah 1990; WDAFC 1989). Table 3-4 presents existing population totals for communities within the project area along with existing and projected County and State tallies.

Over the two-county area and within all of the communities of the project area, the vast majority of the population is white. Ethnic minorities constitute less than 1.5 percent of the population within Summit County and about 1.2 percent for Uinta County; communities range from 96.9 percent white in Evanston to 99.3 percent in Coalville. Those classified as Asian or Pacific Islanders form the largest minority within Summit County, while those classified as American Indian, Eskimo, or Aleut form the Uinta County counterpart. Males outnumber females in each County. The median age of residents of the two Utah communities is 27.2 years, above the State average of 26.2 years but below the County mean of 30.2 years. Corresponding figures for Wyoming are the communities: 26.2 years; the State: 32.0 years; and the County: 27.1 years (US Department of Commerce 1991, WDAFC 1991b).

Within Summit County, single-family residences account for approximately one-half of all housing units, with 4.7 percent classified as either mobile home or trailers; for the eastern Summit County communities, over three-quarters of all units are classified as the former, with nearly 19.0 percent classified as the latter. County-wide, at the time of the census count, 5,271 of 11,256 units were occupied (46.8 percent) and of the occupied units, over 71.0 percent were inhabited by the owners; the associated communities tallied 695 of 778 units occupied (89.3 percent) and of this total, 76.4 percent provided housing for the owners. Similarly, for Uinta County, single-family residences account for more than one-half of the total housing units, with 23.3 percent classified as mobile home or trailer. Of all inhabited units across the County (5,885 of 7,246, 81.2 percent), 72.2 percent are owner occupied; within the project area communities of Wyoming, of the inhabited units (4,516 of 5,505, 82.0 percent) 68.1 percent are owner occupied (UOPD 1991c, WDAFC 1991a).

Per capita personal income levels vary considerably between the two counties. The 1989 per capita personal income of Summit County ($19,476), highest within the State, exceeds the Utah mean ($13,104) by 48.6 percent (University of Utah 1991). Per capita income for Uinta County in 1988 ($11,071) is 18.8 percent below the State average ($13,641), ranking the county as second lowest within Wyoming (WDAFC 1990a). As presented on Table 3-5, per capita personal income, as well as total personal income, increased steadily within Summit County throughout the first eight years of the 1980s, while Uinta County figures undulate over the same period reflecting, in part, the influence of the aforementioned energy "boom" and subsequent "bust".

Because of past "booms", there are more than adequate public services across the region. These include public schools, police protection, fire protection and parks and recreational facilities. Seats of county government are located in Coalville for Summit County and Evanston for Uinta County. Nearest community hospitals are located in Heber City on the western flank of the Uinta Mountains and Evanston to the north. More extensive facilities, including emergency helicopter transport, are available through facilities based in Salt Lake City, Utah, or Casper, Wyoming.

TABLE 3-4
ACTUAL AND PROJECTED POPULATION, 1980-2000

	1980	1985	1990	1995	2000	Percent Change 1980-1990	Percent Change 1990-2000
UTAH	**1,461,037** [1,474,000]	[1,645,000]	**1,722,850** [1,743,100]	[1,842,100]	[1,935,600]	**17.9** [18.3]	[11.1]
Summit County	**10,198** [10,400]	[12,400]	**15,518** [14,000]	[15,200]	[16,300]	**52.2** [34.6]	[16.4]
City of Coalville	**1,031**		**1,065**			**+3.2**	
City of Kamas	**1,064**		**1,061**			**-0.23**	
WYOMING	**469,557** [469,557]	[504,704]	**453,588** [482,851]	[469,840]	[490,390]	**-3.4** [2.8]	[8.1]
Uinta County	**13,021** [13,021]	[21,594]	**18,075** [20,750]	[19,375]	[20,223]	**42.6** [59.4]	[11.9]
City of Evanston	**6,421**		**10,903**			**69.8**	
Town of Lyman	**2,284**		**1,896**			**-17.0**	
City of Mountain View	**628**		**1,189**			**89.3**	

Sources: (1) Utah Office of Planning and Budget, 1991a (actual) and 1991b (projected).
(2) Wyoming Department of Administration and Fiscal Control 1991b (actual); 1989b (projected 1985 and 1990); and 1991a (reviewed projections based on 1990 census totals for 1995 and 2000).

Actual Data = **Numbers in bold print**
Projected Data = [Numbers in brackets]

TABLE 3-5
TOTAL PERSONAL INCOME (TPI) AND PER CAPITA INCOME (PLI) FOR SUMMIT COUNTY, UTAH[1], AND UINTA COUNTY, WYOMING[2]

	Summit County		Uinta County	
Year	TPI	PCI	TPI	PCI
1980	$ 114.7	$ 11,092	$ 129.0	$ 9,424
1981	127.2	11,684	177.8	10,887
1982	134.0	11,759	212.5	10,619
1983	150.1	12,716	221.5	9,962
1984	168.6	13,664	225.5	9,721
1985	187.1	15,037	231.7	9,808
1986	204.0	15,663	222.8	10,572
1987	229.7	17,260	209.8	10,600
1988	251.7	18,170	208.2	11,071

Sources:
(1) Utah Office of Planning and Budget, 1990.
(2) Wyoming Department of Administration and Fiscal Control, 1990a.

Economic Activities

While much of the economic focus of Summit County is centered upon the Park City area and the service sector of the economy generated thereabouts, the eastern portion of the county contributes significantly to the County's economic base through the exploration and extraction of oil and gas. In 1990, Summit County ranked first among Utah counties in the production of natural gas, 322,891 million cubic feet (mmcf) and first in the production of crude oil with 9.8 million barrels (Utah State Economic Coordinating Committee 1991). To the north, Uinta County volumes total 195,386 mmcf and 9.5 million barrels, positioning the County first and third in the aforementioned categories respectively within the State (Wyoming Department of Revenue and Taxation 1990). Evanston remains the center of operations for much of the gas and oil activity within Uinta County and eastern Summit County with Coalville providing lesser support. Field support operations would most likely originate from the Evanston area (USDA n.d. and Flare Industries, Inc. 1991).

Historically, mining has been and, as seen above, remains an important component in the economies of both Summit and Uinta Counties, albeit the percentage of those employed in mining-related activity declined within both political jurisdictions during the 1980s. In 1980, 15.3 percent of the total Summit County nonagricultural work force were employed in mining (610 of 4,000); 18.2 percent were so employed in Uinta County (1,152 of 6,152). In 1988, figures for the counties were 1.9 (138 of 6,985) and 13.1 (1,129 of 8,651) percent respectively. Figures for employment in oil and gas exploration/extraction were unavailable at the County level, but State tallies for the latter part of the decade suggest that nearly one-quarter of all mining employment in Utah is associated with oil and gas while in Wyoming such employment exceeds 50.0 percent (UDES 1990a; WDAFC 1989). Employment generated by mining activities in Uinta County in 1988 followed government (24.0 percent) and trade (21.9 percent) as leading job producers. Services (34.2 percent), trade (25.7 percent), and government (14.0 percent) ranked highest in number of employees within Summit County and mining ranked last of the eight nonagricultural categories delineated.

Due to the inability to forecast new projects within the counties, predictions of employment at local levels are difficult. Nevertheless, projections are available at the State level. Employment in Utah is forecasted to rise from 834,300 in 1990 to 918,840 in 1995, an average growth rate of 2.0 percent. In Wyoming, numbers will increase from 250,700 to 258,777 over the referenced time period, a rate of 0.6 percent. Within both states, government employment is expected to increase at a rate less than the projected State averages whereas employment in services and trade will exceed the mean, while mining employment growth will be near the estimated growth rate in Wyoming and above the rate in Utah (WDAFC 1990b; UDES 1990a). The largest increase in the mining industry with both states is expected to occur in natural gas production, which is expected to nearly double over the five-year period. Actual and projected employment figures for the counties and states are present on Table 3-6.

The average annual unemployment for the two counties for 1990 are as follows: Summit, 5.7 percent, and Uinta, 6.3 percent. Corresponding State tallies for Utah and Wyoming are 4.3 and 5.4 percent respectively. The latter figure represents the lowest recorded average in Wyoming since the last of the "boom" years, 1982 (UDES 1990; Wyoming Department of Employment 1991).

TABLE 3-6
ACTUAL TOTAL NONAGRICULTURAL EMPLOYMENT, 1980-1988[1][2], AND ESTIMATED TOTAL NONAGRICULTURAL EMPLOYMENT, 1990-1995[3][4]

	1980	1984	1988	ESTIMATED 1990	ESTIMATED 1995
STATE OF UTAH	551,889	601,068 [+8.9%]	660,075 [+9.8%]	693,080	772,810 [+11.4%]
Summit County	4,000	5,670 [41.7%]	6,985 [+23.2%]		
STATE OF WYOMING	230,919	220,162 [-4.7%]	203,542 [-7.5]	244,301*	252,140* [+3.2%]
Uinta County	6,448	9,835 [+52.5%]	8,651 [12.0%]	9,923*	10,217* [+3.0%]

Sources:
(1) Utah Office of Planning and Budget, 1990.
(2) Wyoming Department of Administration and Fiscal Control, 1990.
(3) Utah Department of Employment Security, 1990b.
(4) Wyoming Department of Administration and Fiscal Control, 1991a.
*Based on percent 1988 nonfarm employment ratio: 95.6 percent State; 96.7 percent County

County Revenues

Summit County's revenues come in part from certain uses of National Forest land, including a share of timber receipts and oil and gas royalties. In addition, the State of Utah levies a variable oil and gas severance tax, collecting about 3% to 4% of the value of each barrel of oil produced depending on the current market price of oil. These revenues go to the state general fund and are distributed to counties on the same basis as other monies in the fund. Both counties and communities could benefit from these sources of revenues. Outdoor recreation enthusiasts from Summit County and the Salt Lake urban area are the most frequent summer visitors to the project area, using it for hunting, fishing, hiking, and other activities, and could be affected by this project.

Table 3-7 presents the total general revenues for Summit Counties for the 1990 fiscal year. The total general revenue collected in Summit County is approximately $7.2 million. Total 1990 assessed property valuation is $2,058,862,583 for the County, $21,574,459 for the City of Kamas, and $6,861,413 and $13,161,731 for Francis and Oakley. Property tax rates for the same year are set County-wide at 0.3003 percent, for the North Summit School District which serves Coalville at 0.8131 percent and for the South Summit School District, which serves Kamas at 0.7278 percent; while community tax rates total 0.4528 percent for Coalville and 0.3797 percent for Kamas. Both communities exceed the overall County average of 1.39 percent or $139 per $1000 (Utah Foundation 1991).

Table 3-8 presents the total general revenues for Uinta County for the 1989 fiscal year. The total County receipts or revenue is approximately $10.5 million. Total assessed property values for Uinta County in 1991 are as follows: County-wide , $517,296,878; City of Evanston, $23,555,193; Town of Lyman, $2,007,739; and the City of Mountain View, $2,524,150. The 1991 property tax rate for Evanston is $75.549 per $1,000; the rate for Lyman is $76,330 per $1,000; and the rate for Mountain View is $79.559 per $1,000 (Uinta County Assessor's Office 1991).

TABLE 3-7
SUMMIT COUNTY REVENUE
FISCAL YEAR 1990

SOURCE	AMOUNT FOR FISCAL YEAR
Property Tax	3,984,467
Sales Tax	312,120
Other Tax	
Payment In-Lieu of Taxes	339,886
Licenses & Permits	258,977
Intergovernmental Revenues	542,049
Charges for Services	1,006,691
Other Revenues	712,797
Total Revenue	7,156,987

Source: Summit County Auditor's Office, 1991.

TABLE 3-8
UINTA COUNTY REVENUE
FISCAL YEAR 1989-1990

SOURCE	AMOUNT FOR FISCAL YEAR
Property Tax	5,242,731
Sales Tax	1,120,978
Other Tax	394,489
Payment In-Lieu of Taxes	82,000
Licenses & Permits	5,733
Intergovernmental Revenues	2,076,745
Charges for Services	467,858
Other Revenues	796,050
Total Revenue	$10,527,269

Source: Uinta County, Receipts Statement Detail, 1990.2

Visual Characteristics

The management of the visual resources is a concern to the highway travelers and recreation users in the area. The existing situation will be described for the following situations:

- views from scenic route (Mirror Lake Scenic Highway (Utah State Highway 150) passes adjacent to the project area
- views from existing developed recreation facilities - trails, campgrounds, and day use areas
- views from summer homes
- scenic quality - the inherent aesthetic value of the natural landscape
- Visual Quality Objectives (VQOs)

The visual resource inventory was conducted based on the guidelines of the Forest Service Visual Management System (USDA 1974). Data were collected from the Wasatch-Cache National Forest Supervisors Office in Salt Lake City, Utah, and the Evanston Ranger District office in Evanston, Wyoming. Additional data collection consisted of information from USGS 7.5-minute topographic maps, vegetation mapping, contacts with the Forest Landscape Architect, and literature reviews. Field reconnaissance was conducted during September, 1991. Refer to Appendix H for detailed explanation of the method used.

The project area is located within the Middle Rocky Mountain physiographic province. This province is characterized by deeply dissected mountain uplands, numerous peaks and ridges, and streams flowing north-south within deep canyons (Fenneman 1931).

The Uinta Mountains, which include the Kletting, A-1, and Ostler peaks, are the dominant features of the area. The northern slopes of these mountains near the project area are dissected by the Main Fork, the Stillwater Fork, and the Hayden Fork drainages. The entire project area is forested largely with lodgepole

pine, located primarily on slopes of the mountains. Stands of Engelmann spruce with dispersed patches of aspen occur in the rocky drainages.

Mirror Lake Highway and dispersed recreation sites adjacent to the highway may have views from the middleground and background distance zones.

The Forest Service manages the visual resources on National Forests and grasslands with the Visual Management System (VMS). NEPA requires that visual resources be evaluated for any action that could result in potentially adverse effects to the inherent scenic values of the landscape.

Landscape Character Types and Variety Classes

Class A Areas that fall into this class are located adjacent to the Mirror Lake Highway, in the southern central portion of the project area adjacent to the Main Fork drainage, and larger more open areas in the northern and eastern portion of the project area in Christmas Meadows.

Elevations range from 8,600 feet in areas adjacent to Hayden Fork drainage to 9,600 feet on the top ridges near the Main Fork drainage.

Vegetation consists of dense coverage of lodgepole pine and Engelmann spruce occasionally broken by stands of aspen and willow. Variety in other overstory and understory vegetation increase the diversity of the vegetation pattern. Color variations range from light softer greens, yellows and oranges in the deciduous trees during season changes to a darker more solid green of the evergreen pine and spruce.

The Hayden Fork, Stillwater Fork, and Main Fork drainages are among the water features that meander through the project area. Distinctive high mountain lakes nearest to the study area in this class include Hell Hole Lake further to the south, accessed by Hell Hole Lake Trail. Cultural modifications consist of several improved and unimproved roads and trails (Figure 3-9).

Class B Areas that fall into this class are located in the southern portion of the project area along the ridges between the Hayden Fork and Main Fork drainages and between the Main Fork and Stillwater Fork drainages.

Landform consist of moderately dissected or rolling hills generally between 30 to 60 percent slope. Some areas are steep and rocky with poor accessibility. Elevations range from 8,800 feet on the north slopes of the project area to 9,800 feet on ridges adjacent to the Main Fork drainage.

Vegetation consists of dense stands of lodgepole pine and Engelmann spruce occasionally interspersed with stands of aspen. Colors range from the darker greens of the pine and spruce to the lighter greens, yellows and oranges of the aspen.

Several drainages that run into the Main Fork and Stillwater Fork drainages are perennial water features that add to the character of the landscape.

Cultural modifications consist of a few trails and primitive roads dispersed throughout the area (Figure 3-9).

Class C No Class C areas were identified by this inventory.

Viewpoint Inventory and Visual Sensitivity Analysis

The viewpoints in this inventory are divided into four groups. The viewpoints identified in the project area are listed below by group. Use of these viewpoints peaks during the summer months of July and August.

Travel Routes

Sensitivity Level 1 Viewpoints

Mirror Lake Highway (State Highway 150) A paved two-lane road that runs north-south parallel to the western boundary of the project area. This road is closed in the winter months of the year and is groomed for snowmobile use, but snow is not removed for other vehicular travel. This road is a designated scenic highway and would be considered a major travel route (370 average annual daily trips (AADT)) with a high-use volume and high user attitude.

Stillwater Road (Forest Road No. 057) is accessed from Mirror Lake Highway and runs parallel to the Stillwater Fork drainage on the east boundary of the study area.

Sensitivity Level 2 Viewpoints

These roads would be considered secondary travel routes with a moderate to low use volume and moderate user attitude.

Forest Road No. 113 is accessed from and runs parallel to the Stillwater Fork road in Christmas Meadows.

Jeep Trail Road is accessed from Mirror Lake Highway approximately one mile north of the Hayden Fork Campground and runs east for about one mile to the western portion of the project area.

Peninsula Road (Forest Road No. 306) is accessed from Stillwater Road approximately one mile south of Mirror Lake road access and runs less than 0.5 miles southwest to a locked gate.

Recreation Trails

Sensitivity Level 1 Viewpoints

This trail is a primary access to a wilderness area with a moderate use volume and a high user attitude.

Stillwater Trail (Forest Trail No. 098) begins at the end of the Stillwater Road in the Christmas Meadows and runs south into the High Uintas Wilderness. This trail also leads to the Ostler and West Basin trails.

Sensitivity Level 2 Viewpoints

These trails receive moderate use with moderate to high user attitude.

Kermsuh Lake Trail (Forest Trail No. 152) is accessed from the Stillwater Trail approximately 4.5 miles south from Christmas Meadows and runs southwest.

Amethyst Lake Trail (Forest Trail No. 149) is accessed from the Stillwater Trail approximately 3 miles south of Christmas Meadows and runs southeast to Amethyst Basin.

Hell Hole Lake Trail (Forest Trail No. 104) begins at the end of the Peninsula Road and runs south through the middle of the project area paralleling the Main Fork Drainage and continues to the areas adjacent to Hell Hole Lake.

Developed Recreation Sites

Sensitivity Level 1 Viewpoints

These campgrounds receive moderate use with a high user attitude.

Stillwater Campground is located in the northern portion of the project area accessed by Mirror Lake Highway.

Hayden Fork Campground is located in the western portion of the project area approximately 3 miles south of the Stillwater Campground accessed by Mirror Lake Highway.

Beaver View Campground is located in the western portion of the project area approximately 0.75 miles south of the Hayden Fork Campground accessed by Mirror Lake Highway.

Christmas Meadows Campground is located in the eastern portion of the study area and is accessed from the Stillwater Road approximately 3.5 miles south of Mirror Lake Highway. This campground receives a moderate use with a moderate to high user attitude.

Christmas Meadows Summer Homes are located in Christmas Meadows on the west side of the Stillwater Fork drainage and are accessed from the Stillwater Road.

Visual Quality Objectives

Within the project area boundaries, areas with VQOs of Retention, Partial Retention and Modification were delineated using the criteria established by the VMS. Table 3-9 displays the parts of the proposed action in relation to the VQO.

Retention areas are associated with areas having a foreground or middleground distance zone, sensitivity level 1 and variety class of A. This area includes the area adjacent and parallel to the Mirror Lake Highway (Utah State Highway 150), the Stillwater Fork area, and portions of the Peninsula Road and the primitive road. Other features included in this VQO includes the Hayden Fork drainage, the Stillwater, Hayden Fork, and Beaver View campgrounds, and the recreation residences located in Christmas Meadows.

Partial Retention areas are associated with areas having distance zones of foreground, sensitivity level 2 and variety class of A or B, and middleground distance zones, sensitivity level 2 and variety class B. Areas of Partial Retention include areas along portions of the Peninsula and Jeep Trail roads, recreation trails (Main Fork and Forest Road No. 113 trails).

Unseen areas include occasional small areas adjacent to partial retention designations. This area includes the proposed well sites of the project on the east side of Main Fork drainage. Additional areas include large portions of the study area identified as unseen (Figure 3-8).

Modification areas are associated with areas having distance zones of middleground, sensitivity level 2 and variety Class B. These areas include occasional small areas adjacent to Partial Retention designations.

This area includes the alternative well sites of the project on the east side of the Main Fork drainage. Additional areas include large portions of the study area identified as unseen (Figure 3-9).

TABLE 3-9
VISUAL QUALITY OBJECTIVES (VQO) AND TYPE OF ACTIVITY OR STRUCTURE

VQO	WELL SITE A	WELL SITE B
Retention	Stillwater and Peninsula Road improvement	Stillwater and Peninsula Road improvement
Partial Retention	The end of the Peninsula Road and the beginning of Main Fork reconstruction and the Main Fork bridge construction	The end of the Peninsula Road and the beginning of Main Fork reconstruction and the Main Fork bridge construction
Modification	Road construction from bridge to the wellsite and the wellpad	Road construction from the bridge to the wellsite and the wellpad

Cultural Resources

Cultural resources are historic and traditional cultural properties that reflect our nation's heritage. Federal regulations define such properties to include prehistoric and historic sites, buildings, structures, districts, and objects included in, or eligible for inclusion in the National Register of Historic Places (NRHP), as well as artifacts, records, and remains related to such properties (National Historic Preservation Act §301[5]). Traditional cultural properties may be eligible for inclusion in the National Register because they are associated with the cultural practices or beliefs of a living community, are rooted in the history of a community, and are important in maintaining that community's cultural identity (National Register Bulletin 38).

Historic and traditional cultural properties are National Register eligible if they are significant in American history, architecture, archaeology, engineering, or culture. They must possess integrity of location, design, setting, materials, workmanship, feeling, and association, and meet at least one of four criteria:

(a) are associated with events that have made a significant contribution to the broad patterns of our history

(b) are associated with the lives of persons significant in our past

(c) embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant distinguishable entity whose components may lack individual distinction

(d) have yielded, or may be likely to yield, information important in prehistory or history (36 CFR Part 60.4).

Cultural Resource Regulatory Requirements

The National Environmental Policy Act (§101[b][4]) establishes a Federal policy of preserving not only the natural aspects, but also the historic and cultural aspects of our national heritage when undertakings regulated by federal agencies are planned. Implementing regulations (40 CFR Part 1502.16[g]) issued by the Council on Environmental Quality stipulate that the consequences of federal undertakings on historic and cultural resources be analyzed.

Additional requirements for protecting historic properties are identified in the Antiquities Act of 1906; the National Historic Preservation Act of 1966, as amended (80 Stat. 915; 94 Stat. 2987; 16 USC 490), and the Archaeological Resources Protection Act of 1979 (93 Stat. 721; 16 USC). In addition, the American Indian Religious Act of 1978 (P.L. 95-431) requires that all federal agencies take into account the effects of their projects on traditional Native American religious and cultural values and practices. Also, the Native American Graves Protection Act of 1990 expressly provides for the protection of Native American graves, funerary objects, sacred objects, and items of cultural patrimony, and gives Native American groups priority in the ownership and control of such human remains and artifacts.

Regulations for "Protection of Historic Properties" (36 CFR Part 800), which primarily implement Section 106 of the National Historic Preservation Act, define the key regulatory requirements. These regulations define a process for consulting with State Historic Preservation Officers, the federal Advisory Council on Historic Preservation, and other interested parties to ensure that significant historic properties are duly considered as federal projects are planned and implemented.

The steps in the "Section 106 consultation" process involve:

- identifying and evaluating historic resources that may be affected by the proposed undertaking
- assessing the potential effects of the undertaking on significant historic properties
- consulting with the State Historic Preservation Officer, the Advisory Council on Historic Preservation, and other appropriate concerned parties to determine ways to avoid or reduce any adverse effects
- providing the Advisory Council a reasonable opportunity to comment on the proposed undertaking and any effects on significant historic properties
- proceeding with the undertaking under the terms of a Memorandum of Agreement or in consideration of Advisory Council comments

The studies and consultation process undertaken for this EIS constitute an important initial step in this process, which will continue to be pursued, where necessary, during subsequent phases of project implementation.

Three categories of cultural resources are considered: (1) prehistoric archaeological sites, (2) historic era resources, and (3) traditional cultural properties (or ethnographic resources). Prehistoric resources are defined as sites and associated artifacts that date from before the time of written records, which in eastern Utah date from the arrival of Euro-American explorers and fur traders at the beginning of the nineteenth century. Prehistoric resources represent Native American cultures and societies. Historic resources are defined as those sites or properties that were occupied or used after the time when written records became available. Ordinarily, properties must be at least 50 years old in order to be deemed historic. Traditional cultural properties are locations of heritage importance to contemporary traditional cultural groups such as Native American communities.

To determine whether any of these types of cultural resources are present within the project area, (1) relevant agencies were consulted, (2) existing data files and reports were reviewed, and (3) an archaeological reconnaissance survey of the project area was conducted.

Staff members of the Utah State Historic Preservation Office and the Wasatch-Cache National Forest were consulted to identify relevant existing information and review cultural resource sensitivities. Records of properties listed on the National Register of Historic Places were reviewed at the State Historic Preservation Office. Files of previously recorded prehistoric and historic archaeological sites also were checked at the Cultural Records Section of the Utah Division of State History and at the Wasatch-Cache National Forest. Published and unpublished reports of prior cultural resource surveys and investigations also were reviewed. In addition, historic General Land Office plats were checked at the Utah State Office of the BLM to identify evidence of the history of land use in the project vicinity.

An archaeological reconnaissance was conducted during two days in September 1991. On August 29, 1993, a cultural resource evaluation was completed for a drilling project proposed by Amoco Production Company. There are lands included in that evaluation which are also involved with this proposal. They include the potential access route which would lead to well site B. An archaeological reconnaissance was also conducted on June 25, 1976 for the Peninsula Pole Timber Sale. This field inspection covered all of the area now transected by the Peninsula Road and the pole sale site in which Gravel Source Site C is located. Alternative Well Site B, within a wet meadow, also was examined as were potential locations for gravel pits A and C, and crew camp 1.

Cultural History Overview

To provide a context for evaluating the significance of the cultural resources within the project vicinity, the cultural history of the region is briefly reviewed.

Paleo-Indian Era (ca. 9500 - 5500 BC) The Paleo-Indian stage is the earliest convincingly documented period of human occupation of North America. This period began approximately 11,500 years ago at the end of the Pleistocene geological epoch, when continental ice sheets had receded enough to allow human migrations from Asia across the Bering land bridge and southward. Paleo-Indian groups hunted big game with spears tipped with distinctive large lanceolate points. It is not uncommon to find Paleo-Indian spear points associated with the bones of large forms of big game that are now extinct, such as mammoth and bison. In Utah, both fluted and stemmed points are associated with Paleo-Indian period sites. However, no Paleo-Indian stage sites have been identified in this portion of Utah, and they are generally quite rare throughout the state. One mammoth skeleton was found on the Wasatch Plateau near the Huntington Reservoir in association with a stemmed point and radiocarbon dated to about 9,500 BC. Although this is a high altitude, wet meadow setting not unlike the project area, the Huntington mammoth site is virtually unique and considering the general rarity of Paleo-Indian sites, it is very unlikely that any would be present within the project area.

Archaic (ca. 5500 BC - AD 450) The Archaic era lasted about 6,000 years, and is characterized by a cultural lifeway that postdates the extinction of many big game species. Aboriginal bands modified their subsistence strategies to hunt and gather a broader range of smaller game and wild plant foods. During the Archaic era grinding stones, which commonly are taken as evidence for vegetal food processing, became more common, as did roasting pits. Stone circles, representing seasonal habitation structures, also began to appear on the northwestern Plains, and evidence of pit house architecture has been found in southwestern Wyoming.

One of the classic ways to define the Archaic stage has been through changes in projectile point technology. The large lanceolate spear points of the Paleo-Indian period were replaced by side-notched and corner-notched points used with a throwing stick, or atlatl. The Archaic stage on the northwestern Plains and in the Great Basin is commonly divided into early, middle and late periods on the basis of

changing point styles. Archaic period sites in the Uinta Mountains are often characterized by small lithic scatters, occasionally with associated ground stone and hearths.

Late Prehistoric (ca. AD 450 -1500) Around 1500 years ago, a culture known as the Fremont developed along the Wasatch Front and on the Colorado Plateau. This culture, identified on the basis of ceramics, horticulture, and increased sedentism, probably had little influence in the region of the project area. However, ceramic trade wares occasionally show up at Archaic sites in northeastern Utah.

At some point, following the development of the Fremont, subtle changes took place among Archaic populations, perhaps influenced by an influx of Numic speakers from the Great Basin. There are several ways to define the break between the Archaic and this Late Prehistoric period in Utah. These include the introduction of small side-notched and corner-notched projectile points associated with the use of the bow and arrow, the presence of pottery, and influences of the Fremont culture. Projectile points found in southwestern Wyoming and eastern Utah are similar to both Plains and Great Basin types and are especially suggestive of direct influences from the Plains during the early part of the Late Prehistoric period.

Protohistoric (ca. AD 1500 - 1840) The Protohistoric period refers to the time interval when Euro-American culture initially affected Native American lifeways. The assimilation of European imported materials and culture, including the horse, firearms, and manufactured goods, had an enormous effect on Native American settlement and subsistence patterns. The horse increased mobility, and the pressures from Euro-Americans moving westward increased tribal displacement and intensified warfare.

The presence of metal projectile points and tools, gun parts, glass beads and other trade goods, intermixed with native stone artifacts, or horse images on rock art, are some of the archaeological attributes considered to be indicative of the Protohistoric period. The Protohistoric period in the project area can be said to have ended and the Historic period begun with the establishment of Jim Bridger's trading post on the Black's Fork of the Green River in 1843, which represents the first attempt to found a permanent Euro-American settlement in the region.

Although the ethnohistory of the region is not well documented, eastern Utah is considered to have been principally the territory of the Ute. Although the Ute practiced a semi-sedentary lifeway, exotic artifacts recovered from Protohistoric sites suggest a great deal of inter-regional contact with other cultural groups. Corrugated pottery characteristic of the Anasazi culture of the Southwest, and projectile points characteristic of Plains cultural groups have been recovered from Protohistoric sites in eastern Utah. Horse trails have also been documented running north-south through eastern Utah, and interconnecting with trails that run east-west from the Vernal area.

Historic (ca. AD 1840 - 1940) The project area is located within an isolated mountain valley, midway between the 1840s settlement on Black's Fork to the northeast and the Mormon settlements of the Great Salt Lake Valley to the west. Occasional use of the project area may have been made early on by trappers along the Stillwater Fork, and later by loggers and sheep herders.

Industrial development originating out of southwestern Wyoming during the twentieth century related primarily first to exploitation of coal, then oil, and finally natural gas. Oil and gas exploration, of course, continues today and is the impetus for the proposed action.

Tie Hacking The most intensive historic use of the North Slope of the Uinta Mountains is related to timbering, especially the tie-hacking industry. Tie hacking was driven primarily by the Union Pacific's need for railroad ties, but some lumbering was pursued to supply mines with framing timbers and for production of charcoal used by smelters in the Great Salt Lake Valley and in Colorado. The Union Pacific virtually monopolized the tie-hacking business and most of the timber was bought by their contractor, Coe and

Carter. Several companies competed in this market. Between 1872 and 1875 one of them, the Hilliard Flume and Lumber Company, constructed a 30-mile flume for transporting logs (Colton 1967). This project, originally known as "Sloan's Folly," stretched from the west Hayden Fork headwaters to Hilliard, Wyoming. A branch flume, six miles in length, also was constructed on the head waters of Stillwater Fork. This branch was known as the Howe Feeder and is partially within the project area.

The Hilliard Flume, including the Howe Feeder, was built totally of local timber at a cost of $200,000. It was held together with eighty tons of square spikes and carried water on trestles up to 16 feet high with almost no leakage (Colton 1967). Efficient operation of the flume and development of multiple markets for lumber and charcoal allowed Sloan and his partners to turn their "folly" into a successful business venture. In 1885, following a fall in the price of charcoal, the flume was abandoned and sold to a Boston company, which after a period of unsuccessful operations, went broke. The flume was then sold to George W. Carlton who dismantled the lower portion, which he sold for building materials. The Howe Feeder was left to rot.

During the operation of the flume, a small town was built near Gold Hill on Mill City Creek, well away from the project area. Barracks to house 500 men and a company store were located there. In addition, cabins housing the tie hackers can be found throughout the region, including within the project area (Colton 1967).

Most of the cutting and skidding of the ties was done in the winter, often by men from nearby agricultural communities. Professional loggers, often of Scandinavian extraction, also cut ties, ran the log drives during the spring runoff, and operated the mills. Tie hacking was cold, difficult, and lonely work.

The end of the charcoal industry and overcutting of large areas signaled the end to this phase of tie hacking. Sporadic and periodic episodes of tie hacking occurred on the North Slope through the 1920s. In 1912 and 1913, the Standard Timber Company's tie operation was located several miles to the northeast along Mill Creek, but no cutting was done within the project area.

Archaeologically, tie hacking facilities are represented by skid roads, decking areas, log cabins, flumes, splash dams, mill ponds, piles of sawdust, and abandoned stacks of cut timber. At some locations, the remains of administrative centers and commissaries also can be found. Most of these remains are in a state of extreme decomposition, and will probably largely disappear with another fifty years of exposure to the elements.

Inventory Results

The review of cultural resource site files and previous survey reports for the township surrounding the project area identified twelve prior survey efforts (Table 3-10) undertaken since about the mid-1970s. These prior inventory efforts have resulted in the recording of 16 sites. The survey boundaries and survey methods for most of these previous efforts are not documented, so it is impossible to develop good statistical estimates of the density of cultural resources within the region. The data do suggest that site density may be on the order of two sites per square mile.

All of the previously recorded sites are archaeological sites dating from the historic period. Most of the sites are remnants of log cabins, reflecting tie-hacking activities. A couple of the sites are small scatters of historic trash that may stem from agricultural activities such as seasonal sheep herding.

Previous surveyors point out that ground visibility is generally low, and this may account for the lack of prehistoric archaeological sites being detected. Aboriginal populations almost certainly hunted and gathered in the mountainous zones at least seasonally, but the archaeological remnants of their camps and

work stations are virtually invisible beneath thick undergrowth. The site file and literature review indicates no traditional cultural properties have been identified within the vicinity of the proposed action.

Four of the previously recorded sites were recommended as being insignificant (that is, not eligible for listing on the National Register of Historic Places) by the archaeologists who initially discovered them, while one site was recommended as being significant. We found no documentation of whether the State Historic Preservation Officer officially commented on these recommendations. Another three sites are listed as never having been evaluated. One site, 42Sm103, was officially determined to be significant and it was listed on the National Register in 1978 as the Howe Flume Historic District. The proposed Table Top Prospect area partially overlaps this district (Figure 3-11).

The Howe Flume Historic District encompasses about 260 acres and includes archaeological remnants of 19 recorded structures dating from about 1873 to 1885: a flume, four excavated cuts for the flume, a dam, a bridge, a probable loading platform, a road, and 10 log cabins in four separate clusters. The nomination form indicates the district was found to have local significance within the areas of historic archaeology and industry. The documentation indicates that district is significant because of its potential to yield additional important information, but is ambiguous about whether it was also deemed significant under criterion "a" because of its association with local timbering activities.

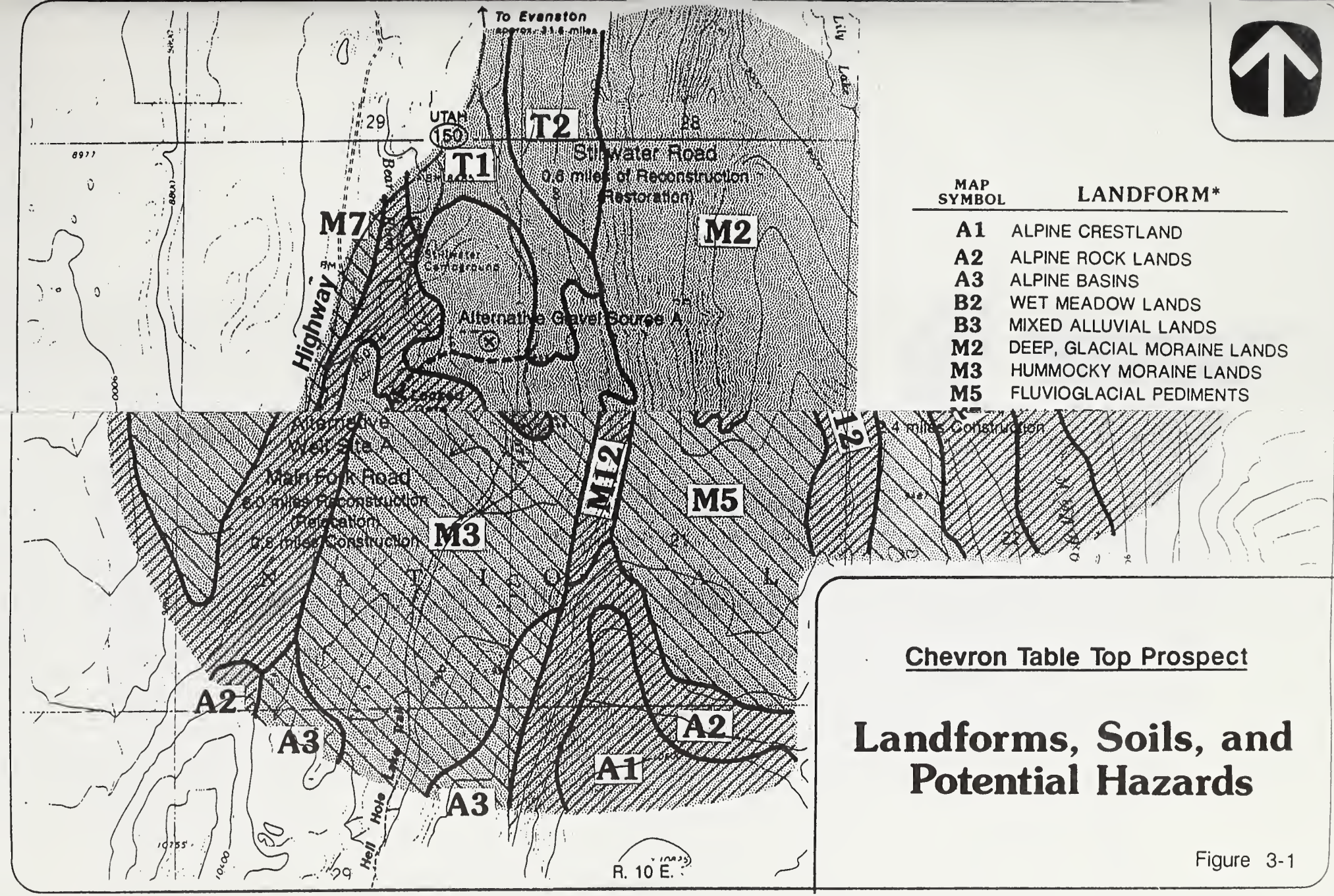
The reconnaissance survey conducted in September 1991 indicated that the district must look much as it did in 1977 when it was originally recorded and characterized as having no major nonhistoric man-made intrusions. Previously undocumented ruins of two log cabins and several skid roads were noted during the reconnaissance.

Although it is an important site related to the history of tie hacking, the Howe Flume Historic District is not unique. The Wasatch-Cache National Forest has prepared and distributes a brochure for the general public about the historical sites associated with the tie-hacking industry of the North Slope of the Uinta Mountains. The Howe Flume Historic District is not called out on the brochure (perhaps because it is relatively remote), but half a dozen other sites with historic remnants are identified for self-guided visitation.

TABLE 3–10
SUMMARY OF PREVIOUS CULTURAL RESOURCE SURVEYS

Year	Project	Acres	Sites Recorded	NRHP Status	Site Types	Source
unknown	Forest Service general survey	unrecorded	42Sm56	unevaluated	tie–hack cabins and facilities; spread over 10 sections	Carpenter nd
1976	Peninsula Pole timber sale	unrecorded	42Sm17	recommended eligible	log cabin	Clark 1976
1976	Boundary Creek timber sale	unrecorded	42Sm18 42Sm19	recommended ineligible	log cabin log cabin	Clark 1976
ca. 1977	Howe Flume NRHP nomination	unrecorded	42Sm103	listed	tie–hack cabins, flume and facilities	Ayres 1977
1981	Hayden campground	unrecorded	42Sm72 42Sm73	unevaluated	log cabin log cabin	Mlazovsky and Ayres 1981
1981	Lily Lake timber sale	unrecorded	42Sm76 42Sm78	unevaluated	log cabin 8 log cabins	Mlazovsky and Ayres 1981
1982	Forest Service general survey	unrecorded	42Sm94	recommended ineligible	log cabin	Mlazovsky and Ayres 1982
1984	Sohio wells	1471	42Sm104 42Sm105 42Sm106 42Sm107 42Sm110	recommended ineligible	historic trash log cabin loading dock timber milling historic trash and aspen art	Brechtel and Tate 1984; O'Neil and Burchett 1984
1985	AMOCO wells	100	none			Hauck 1985
1986	Forest Service general survey	unrecorded	42Sm151	recommended ineligible	log cabin	Mlazovsky 1986
1987	Quasar well	11	none			Enders 1987a
1987	Wolverine wells	6	none			Enders 1987b





Chevron Table Top Prospect

Landforms, Soils, and Potential Hazards

Figure 3-1

MAP SYMBOL	LANDFORM*
A1	ALPINE CRESTLAND
A2	ALPINE ROCK LANDS
A3	ALPINE BASINS
B2	WET MEADOW LANDS
B3	MIXED ALLUVIAL LANDS
M2	DEEP, GLACIAL MORAINE LANDS
M3	HUMMOCKY MORAINE LANDS
M5	FLUVIOGLACIAL PEDIMENTS
M7	VALLEY TRAIN LANDS
M12	SHALLOW, MOUNTAIN SLOPE LANDS
T1	ANCIENT STREAM TERRACE LANDS
T2	FLUVIAL MORAINE LANDS

HAZARD POTENTIAL

HIGH HAZARD POTENTIAL

MODERATE HAZARD POTENTIAL

LOW HAZARD POTENTIAL

*ASSOCIATED SOIL CHARACTERISTICS ARE DESCRIBED IN TEXT.

1000 0 1000 2000

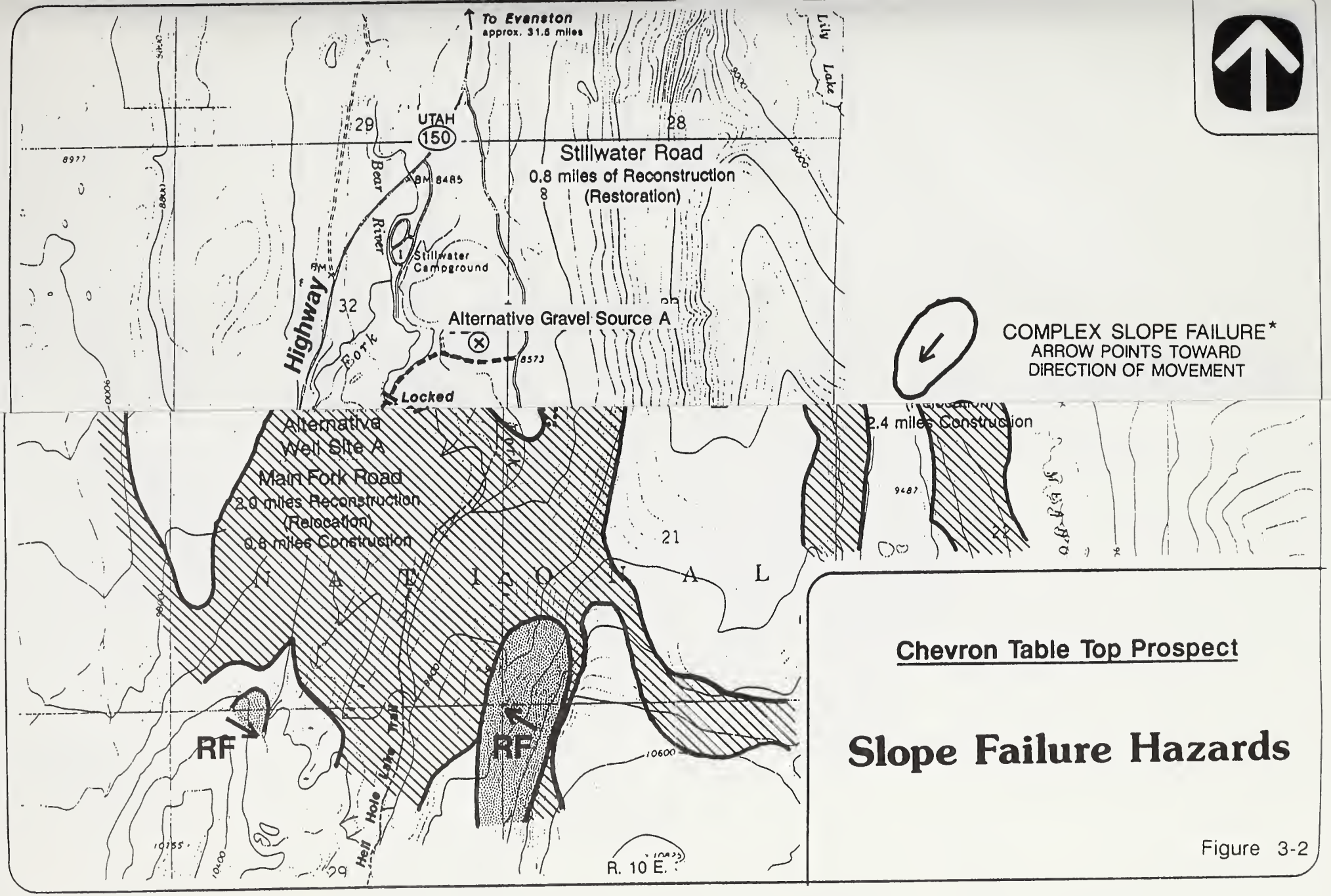
SCALE IN FEET

SOURCE:
U.S.G.S. 7.5 MINUTE QUADRANGLES ENTITLED "DEADMAN MOUNTAIN, UTAH - WYOMING" AND "CHRISTMAS MEADOWS, UTAH" BOTH SHEETS DATED 1972.

Chevron Table Top Prospect

Landforms, Soils, and Potential Hazards

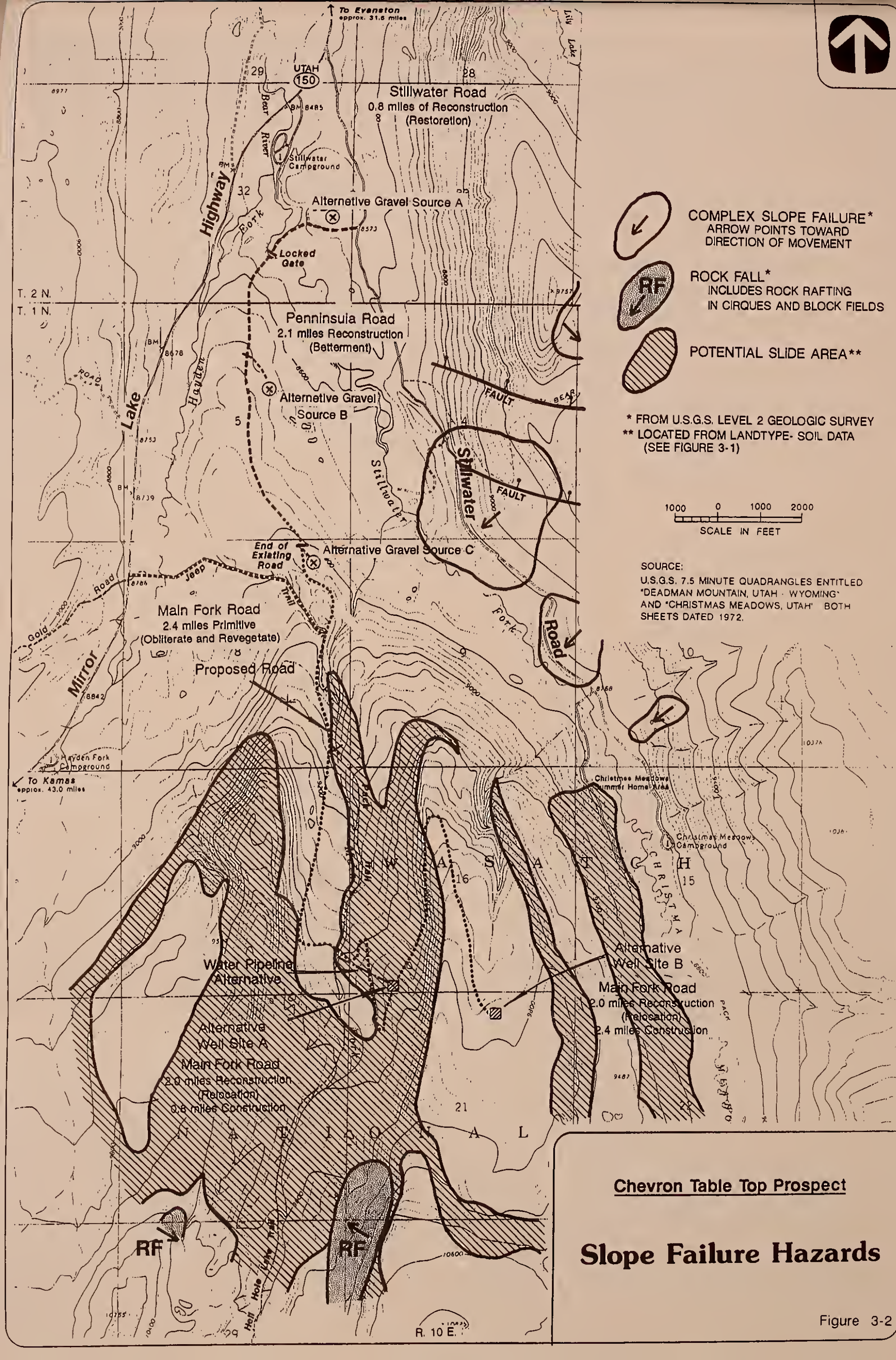
Figure 3-1



Chevron Table Top Prospect

Slope Failure Hazards

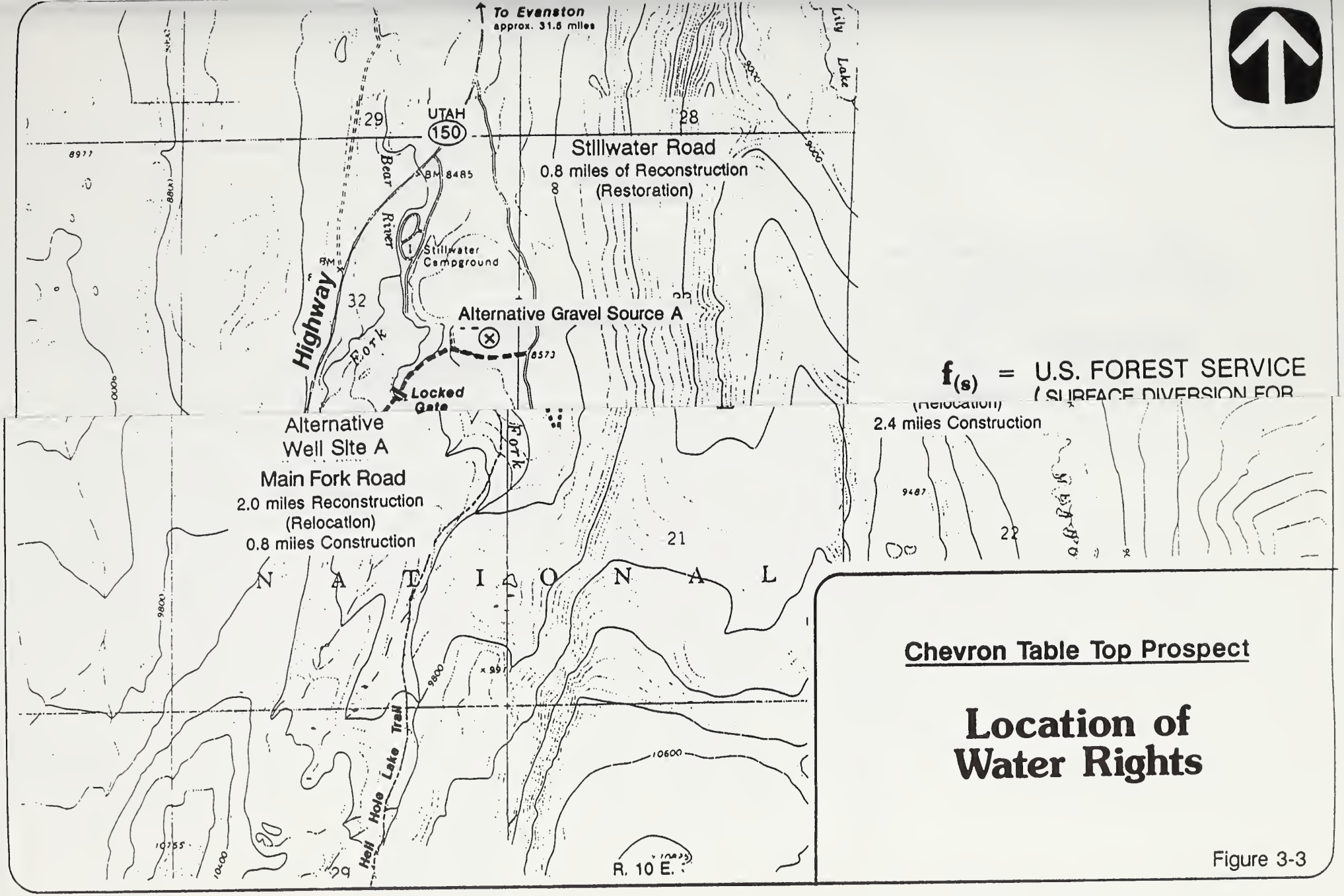
Figure 3-2



Chevron Table Top Prospect

Slope Failure Hazards

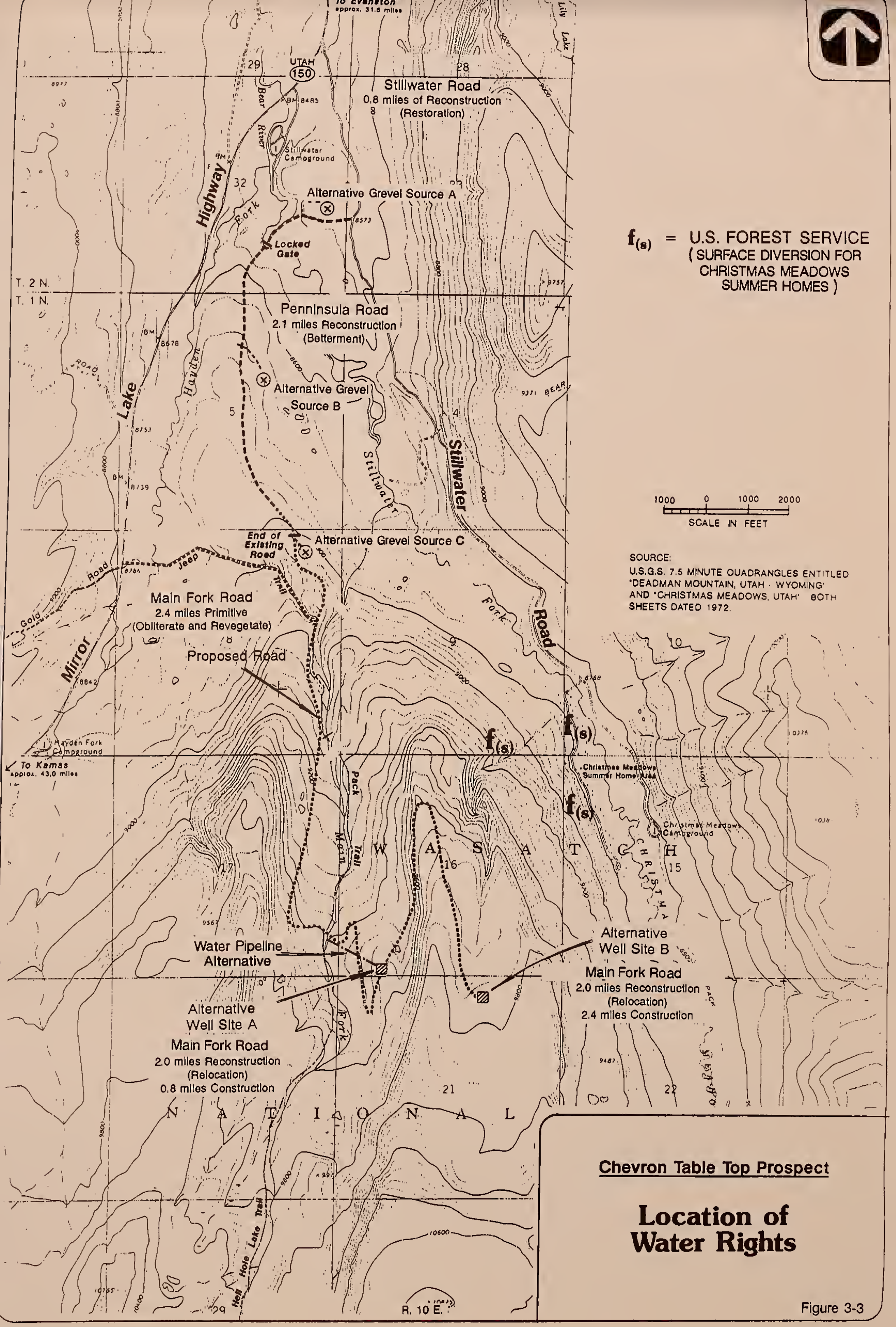
Figure 3-2



Chevron Table Top Prospect

Location of Water Rights

Figure 3-3



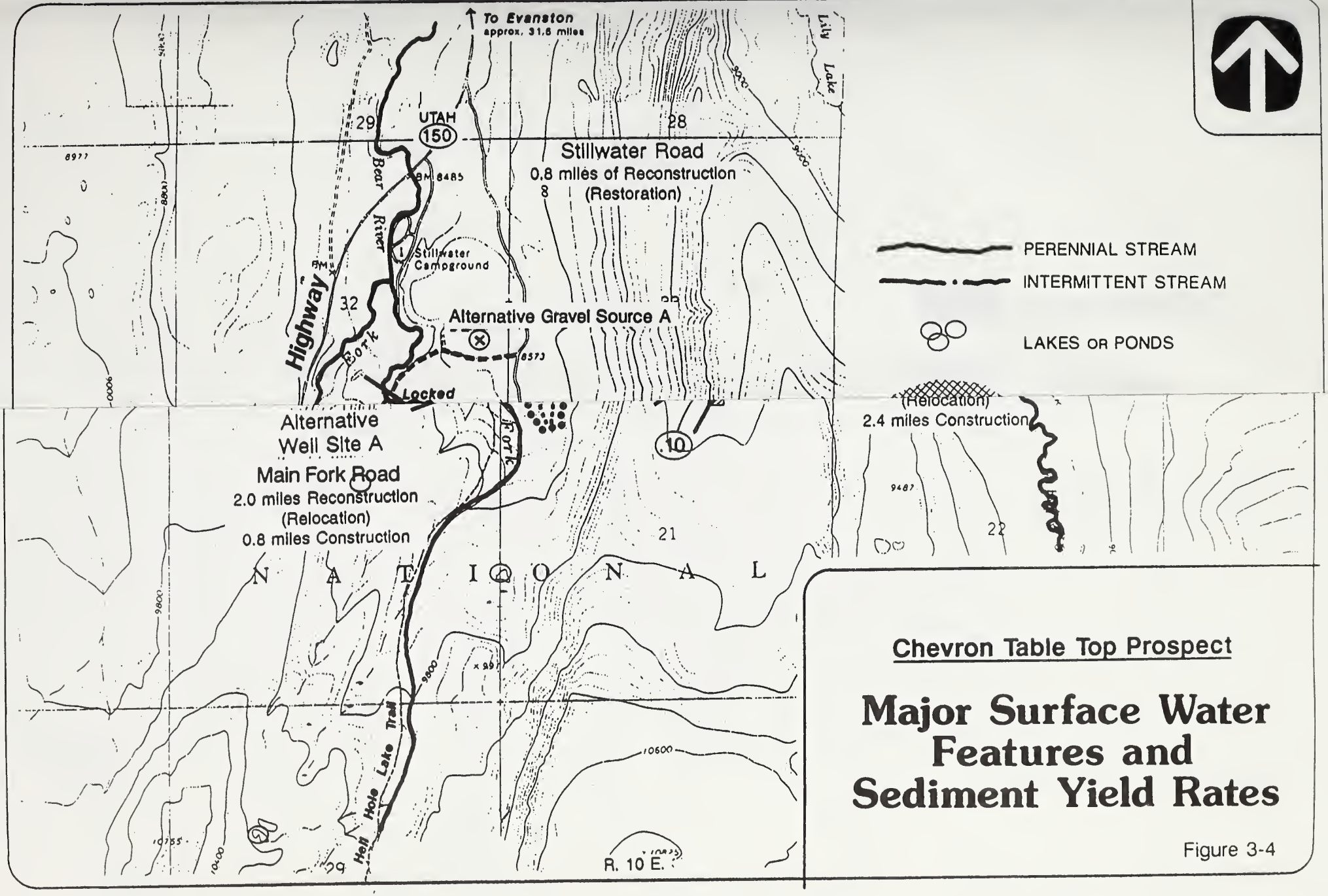
f(s) = U.S. FOREST SERVICE
(SURFACE DIVERSION FOR CHRISTMAS MEADOWS SUMMER HOMES)

SOURCE:
U.S.G.S. 7.5 MINUTE QUADRANGLES ENTITLED "DEADMAN MOUNTAIN, UTAH - WYOMING" AND "CHRISTMAS MEADOWS, UTAH" BOTH SHEETS DATED 1972.

Chevron Table Top Prospect

Location of Water Rights

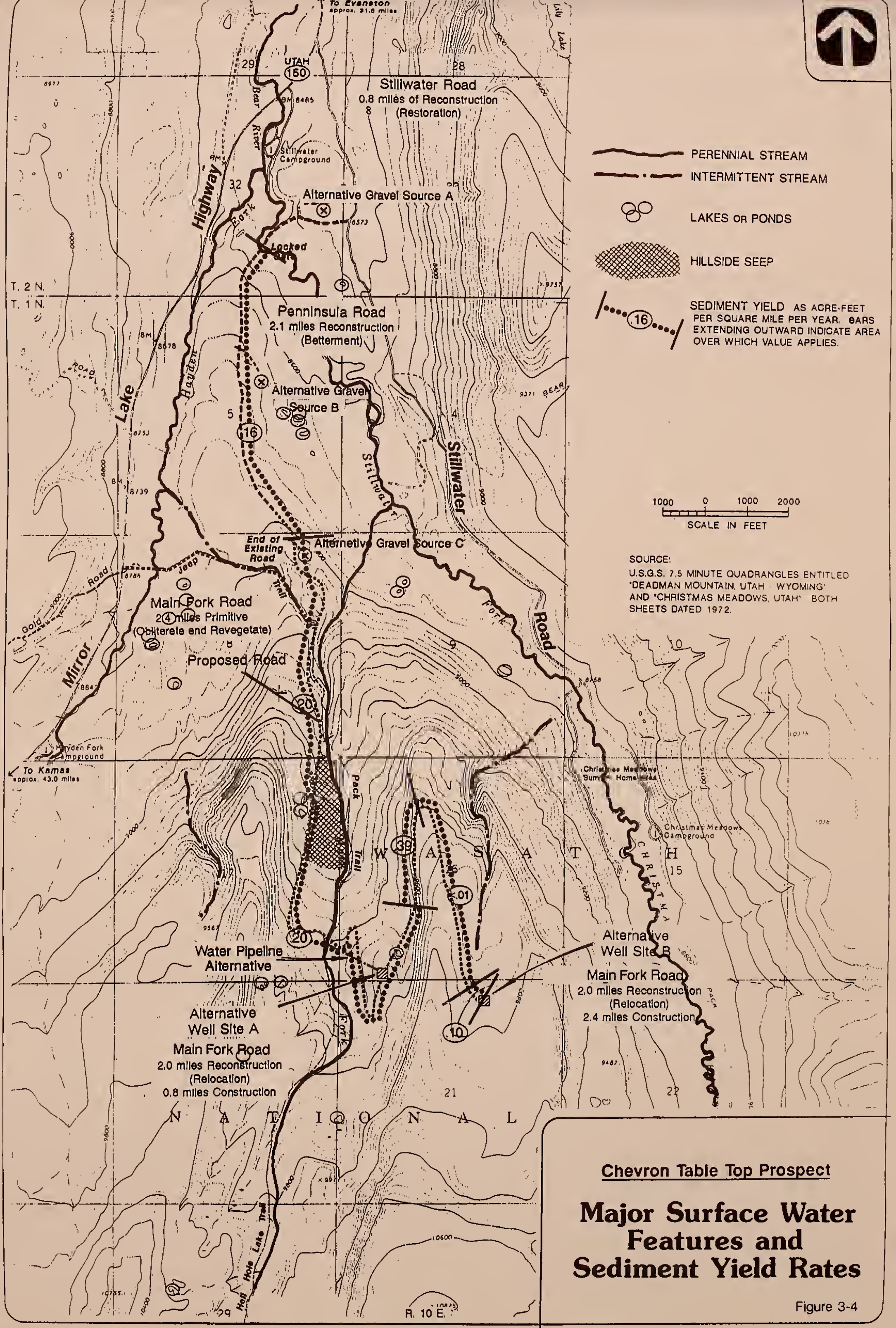
Figure 3-3



Chevron Table Top Prospect

Major Surface Water Features and Sediment Yield Rates

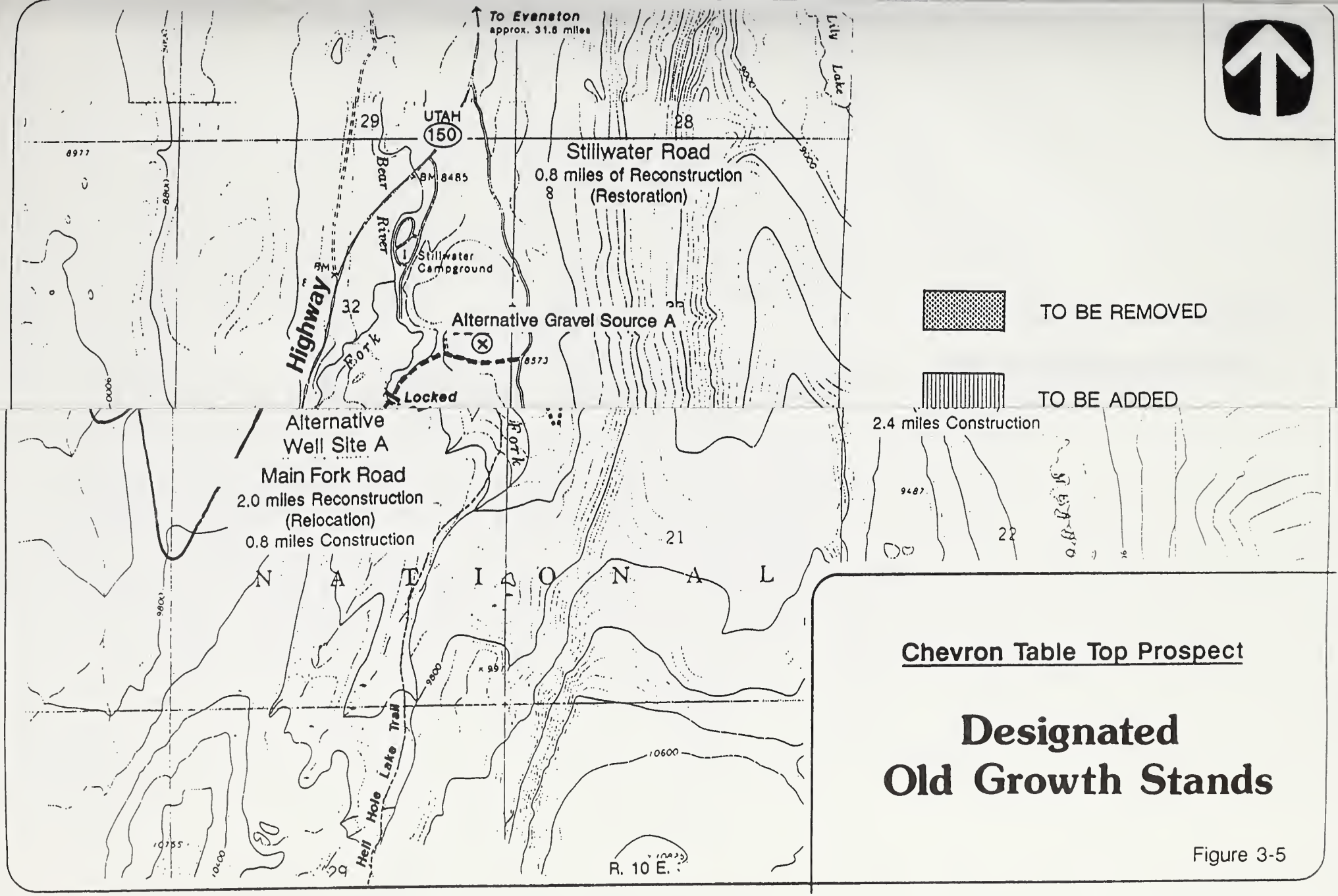
Figure 3-4



Chevron Table Top Prospect

Major Surface Water Features and Sediment Yield Rates

Figure 3-4



Chevron Table Top Prospect

Designated Old Growth Stands

Figure 3-5

TO BE REMOVED

TO BE ADDED

1000 0 1000 2000
SCALE IN FEET

SOURCE:
U.S.G.S. 7.5 MINUTE QUADRANGLES ENTITLED 'DEADMAN MOUNTAIN, UTAH - WYOMING' AND "CHRISTMAS MEADOWS, UTAH" BOTH SHEETS DATED 1972.

To Evanston
approx. 31.8 miles

UTAH 150

Stillwater Road
0.8 miles of Reconstruction
(Restoration)

Stillwater Campground

Alternative Gravel Source A

Locked Gate

Penninsula Road
2.1 miles Reconstruction
(Betterment)

Alternative Gravel Source B

062/160

070/87

End of Existing Road

Alternative Gravel Source C

064/62

070/25

Main Fork Road
2.4 miles Primitive
(Obliterate and Revegetate)

Proposed Road

068/139

088/43

069/39 Water Pipeline Alternative

Alternative Well Site A
Main Fork Road
2.0 miles Reconstruction
(Relocation)
0.8 miles Construction

Alternative Well Site B
Main Fork Road
2.0 miles Reconstruction
(Relocation)
2.4 miles Construction

Hayden Fork Campground

To Kamas
approx 43.0 miles

Christmas Meadows Summer Home Area

Christmas Meadows Campground

Bear River

Highway

Lake

Stillwater Fork

Pack Trail

Mirror Lake Road

Gold Road

Jeep Trail

Hell Hole Lake Trail

Lily Lake

T. 2 N.
T. 1 N.

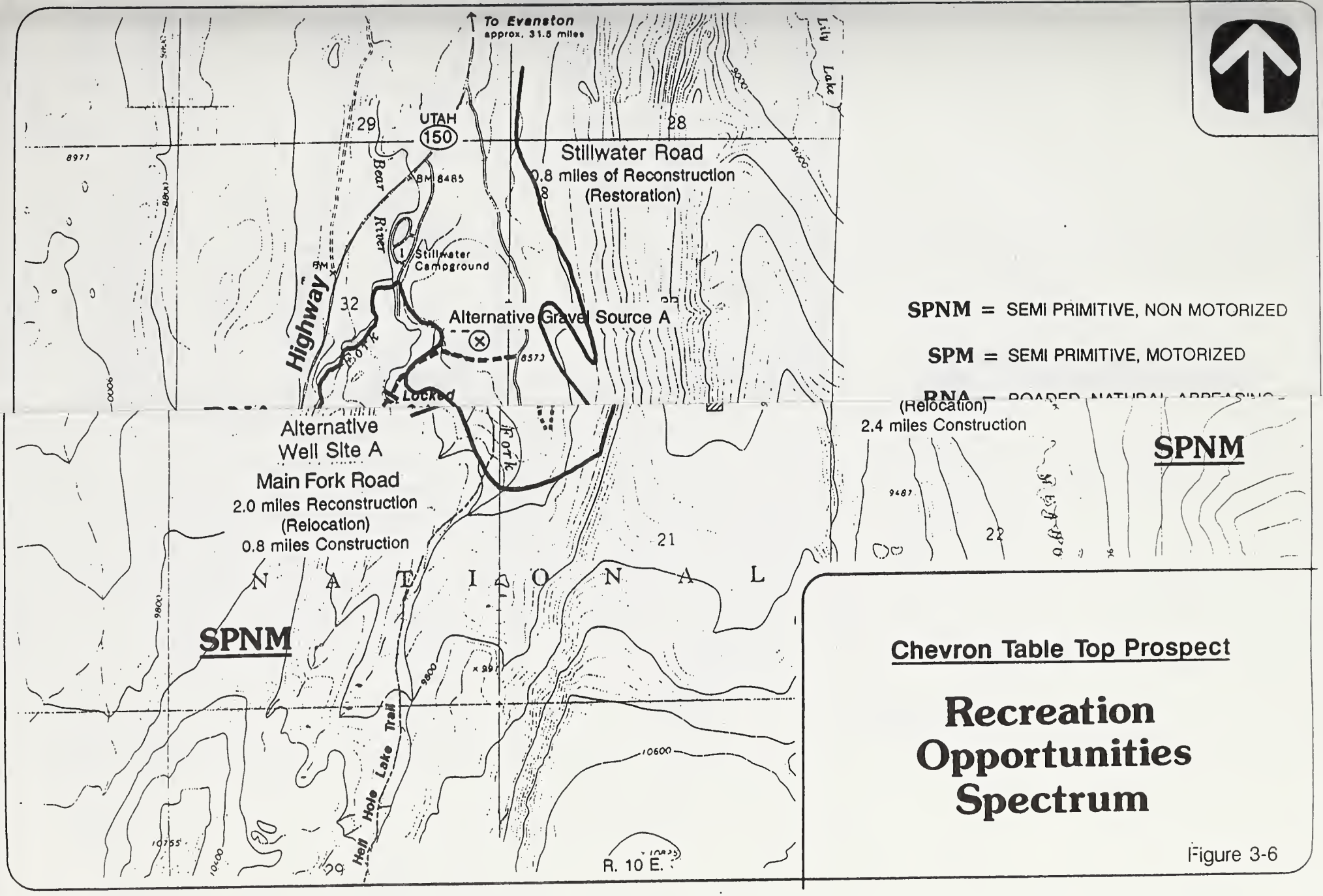
R. 10 E.

WASATCH NATIONAL

Chevron Table Top Prospect

Designated Old Growth Stands

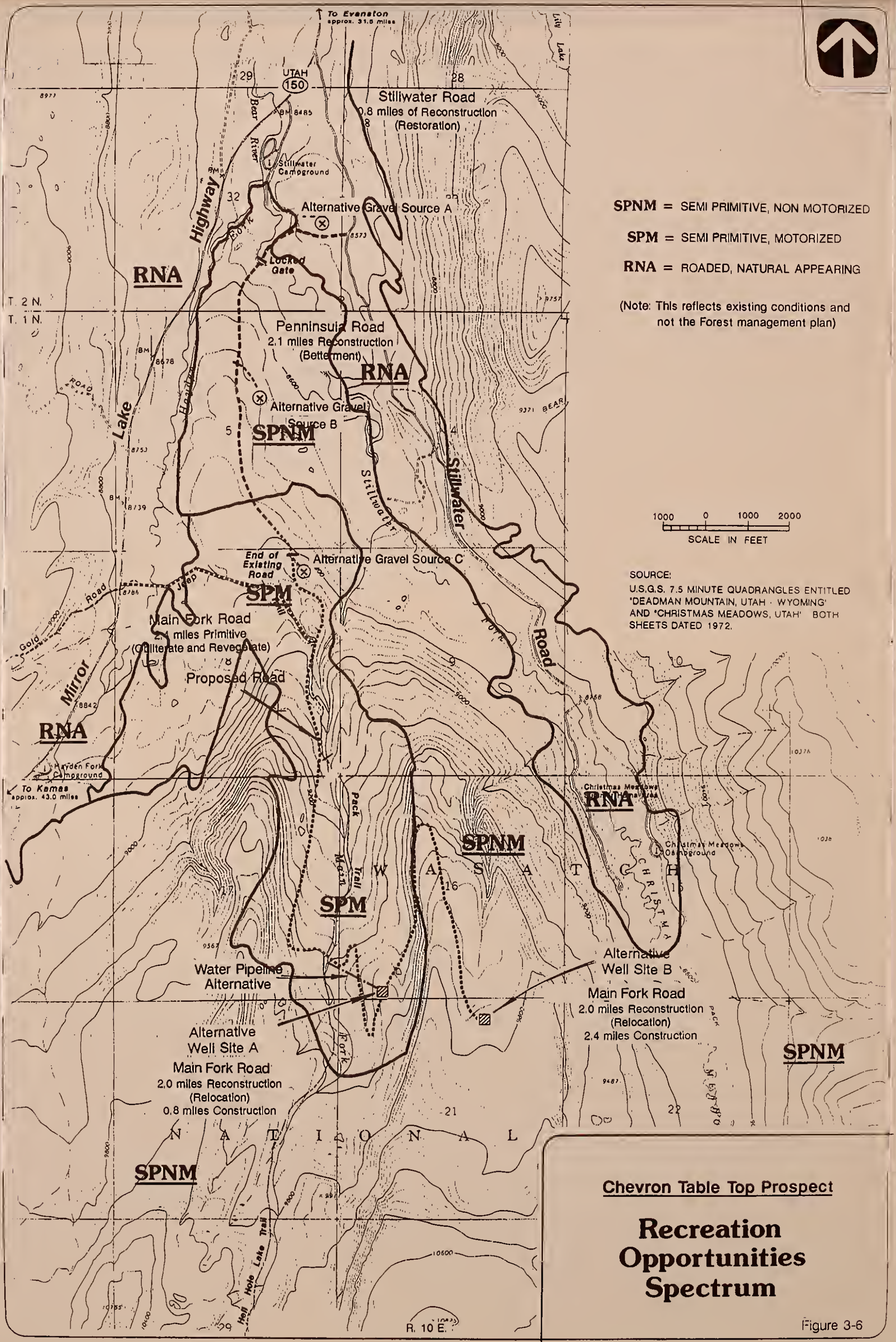
Figure 3-5



Chevron Table Top Prospect

Recreation Opportunities Spectrum

Figure 3-6



SPNM = SEMI PRIMITIVE, NON MOTORIZED

SPM = SEMI PRIMITIVE, MOTORIZED

RNA = ROADED, NATURAL APPEARING

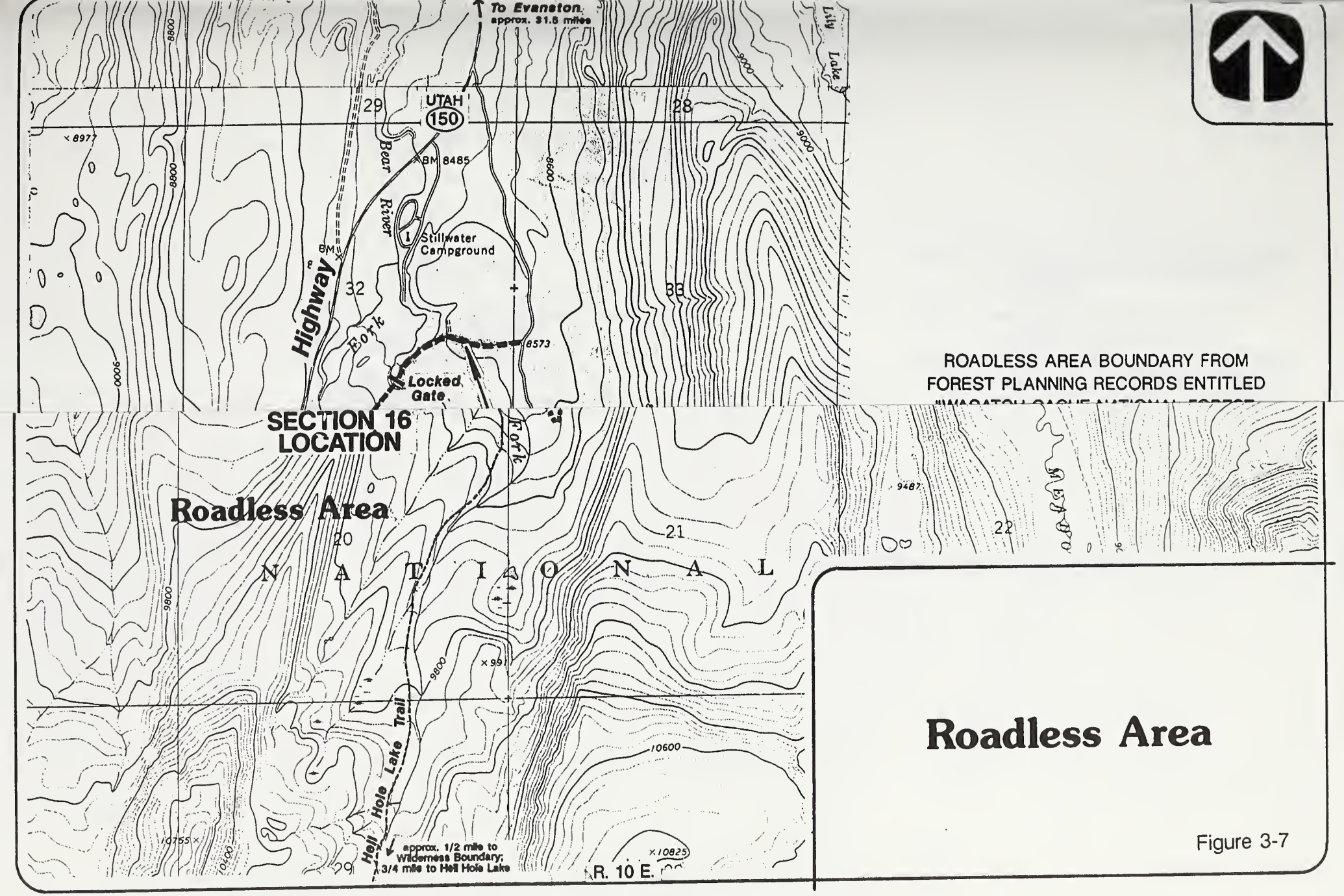
(Note: This reflects existing conditions and not the Forest management plan)

SOURCE:
U.S.G.S. 7.5 MINUTE QUADRANGLES ENTITLED 'DEADMAN MOUNTAIN, UTAH - WYOMING' AND 'CHRISTMAS MEADOWS, UTAH' BOTH SHEETS DATED 1972.

Chevron Table Top Prospect

Recreation Opportunities Spectrum

Figure 3-6



ROADLESS AREA BOUNDARY FROM FOREST PLANNING RECORDS ENTITLED

Roadless Area

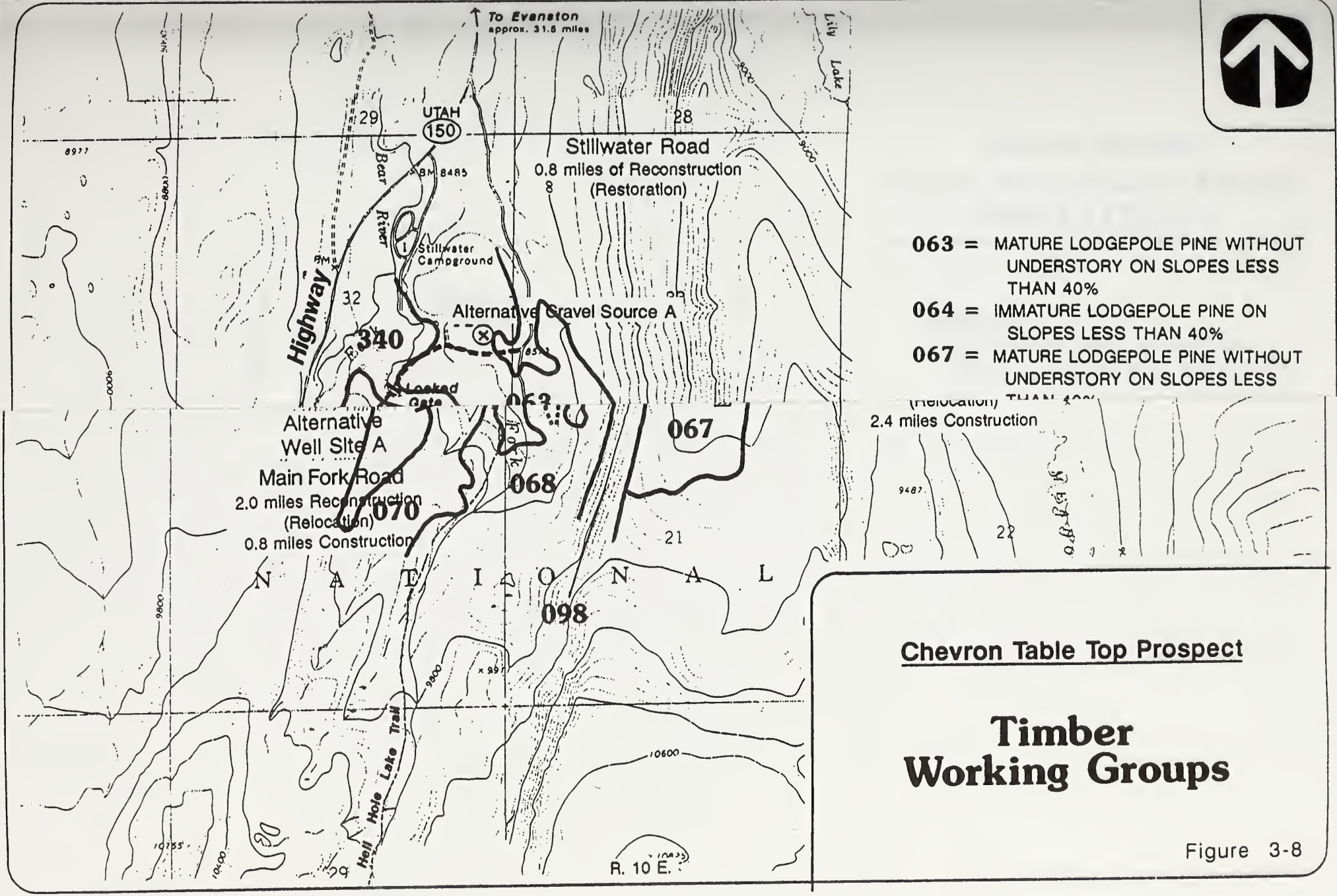
Figure 3-7

ROADLESS AREA BOUNDARY FROM FOREST PLANNING RECORDS ENTITLED "WASATCH-CACHE NATIONAL FOREST ROADLESS AREA RE-EVALUATION - OCTOBER 1983".

Land Having Roadless Characteristics in Addition to the Inventoried Roadless Area

Roadless Area

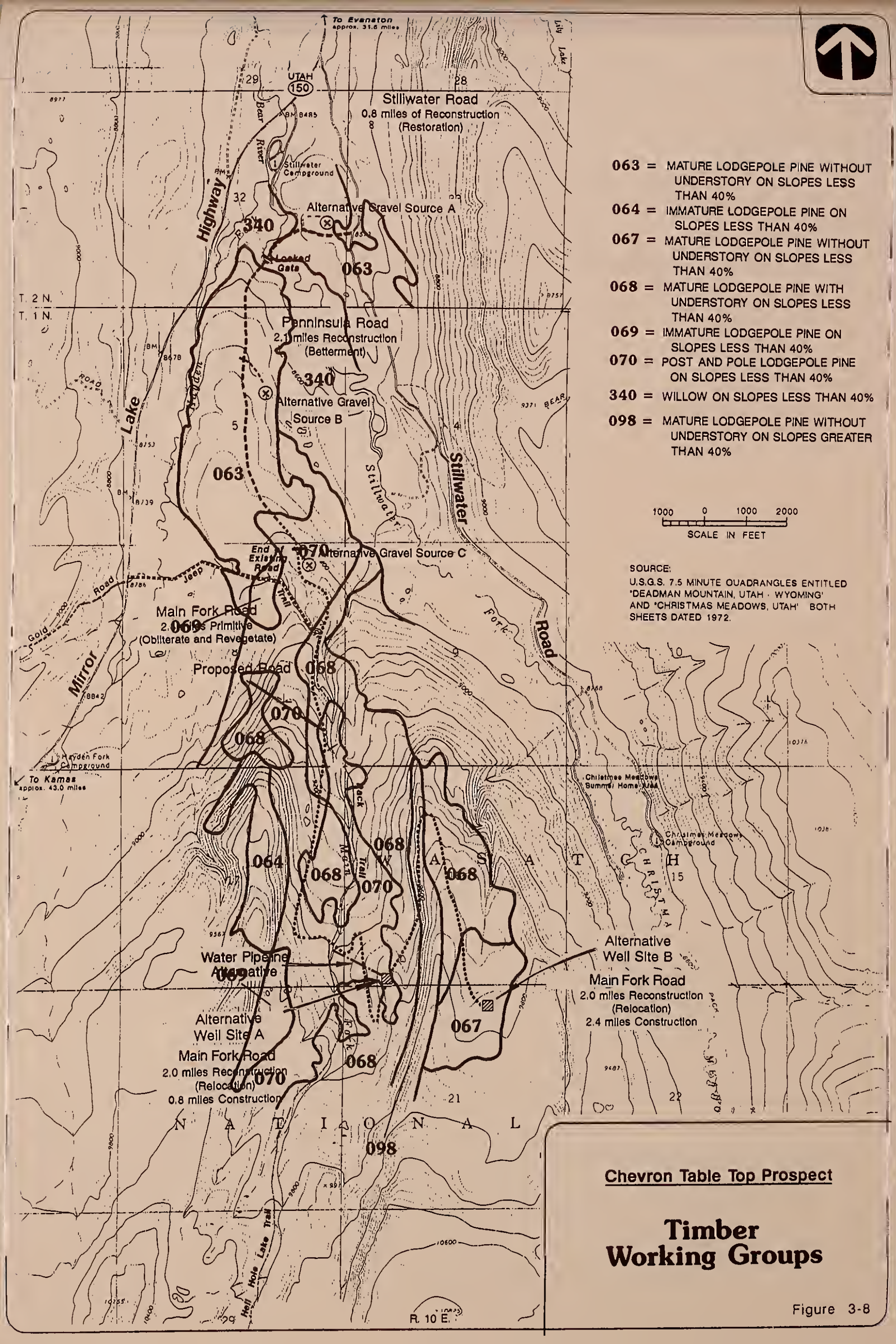
Figure 3-7



Chevron Table Top Prospect

Timber Working Groups

Figure 3-8



063 = MATURE LODGEPOLE PINE WITHOUT UNDERSTORY ON SLOPES LESS THAN 40%

064 = IMMATURE LODGEPOLE PINE ON SLOPES LESS THAN 40%

067 = MATURE LODGEPOLE PINE WITHOUT UNDERSTORY ON SLOPES LESS THAN 40%

068 = MATURE LODGEPOLE PINE WITH UNDERSTORY ON SLOPES LESS THAN 40%

069 = IMMATURE LODGEPOLE PINE ON SLOPES LESS THAN 40%

070 = POST AND POLE LODGEPOLE PINE ON SLOPES LESS THAN 40%

340 = WILLOW ON SLOPES LESS THAN 40%

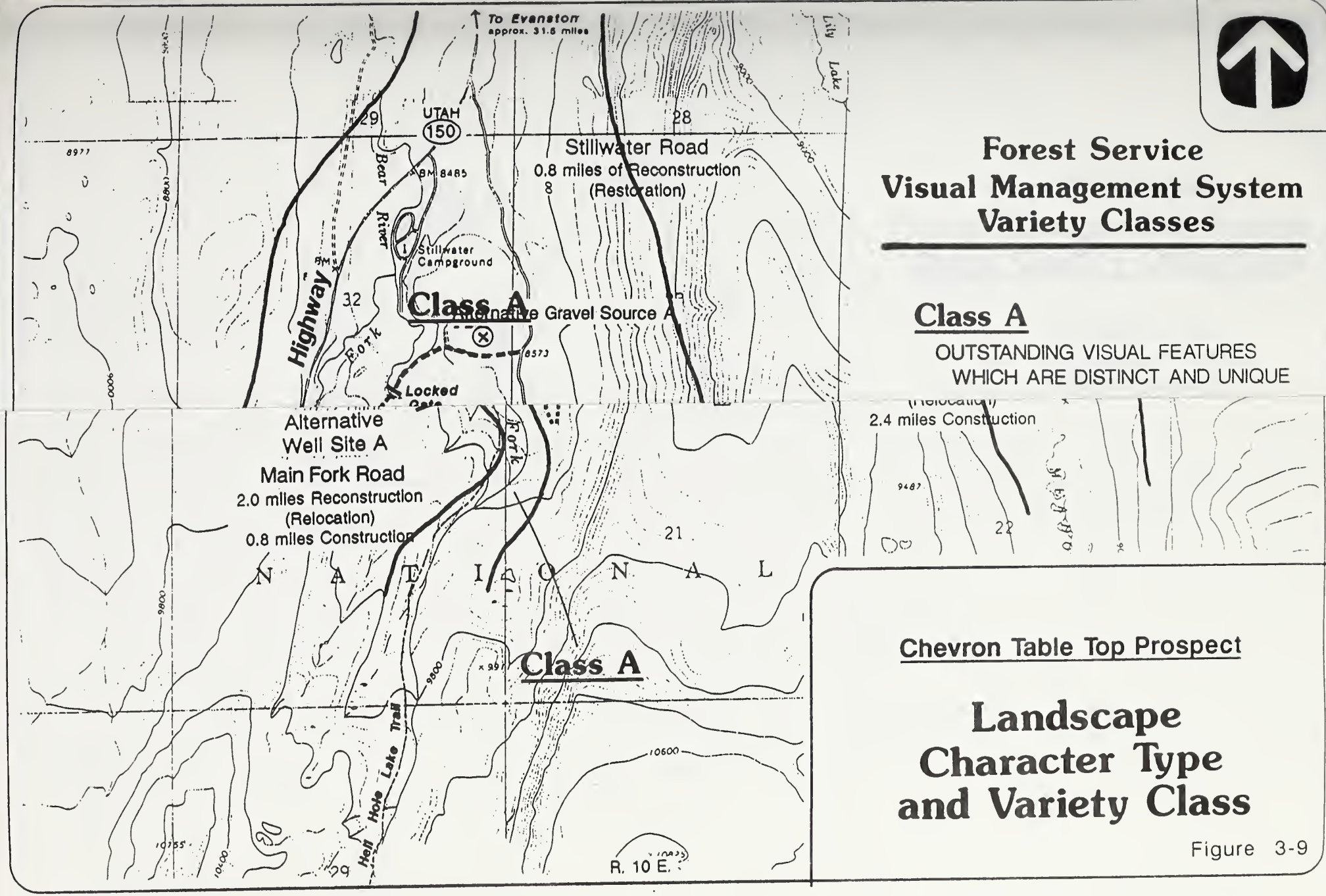
098 = MATURE LODGEPOLE PINE WITHOUT UNDERSTORY ON SLOPES GREATER THAN 40%

SOURCE:
U.S.G.S. 7.5 MINUTE QUADRANGLES ENTITLED "DEADMAN MOUNTAIN, UTAH - WYOMING" AND "CHRISTMAS MEADOWS, UTAH" BOTH SHEETS DATED 1972.

Chevron Table Top Prospect

Timber Working Groups

Figure 3-8



Forest Service Visual Management System Variety Classes

Class A

OUTSTANDING VISUAL FEATURES WHICH ARE DISTINCT AND UNIQUE

Chevron Table Top Prospect

Landscape Character Type and Variety Class

Figure 3-9

Forest Service Visual Management System Variety Classes

Class A

OUTSTANDING VISUAL FEATURES
WHICH ARE DISTINCT AND UNIQUE

Class B

AVERAGE VISUAL FEATURES
NOT RARE OR UNIQUE

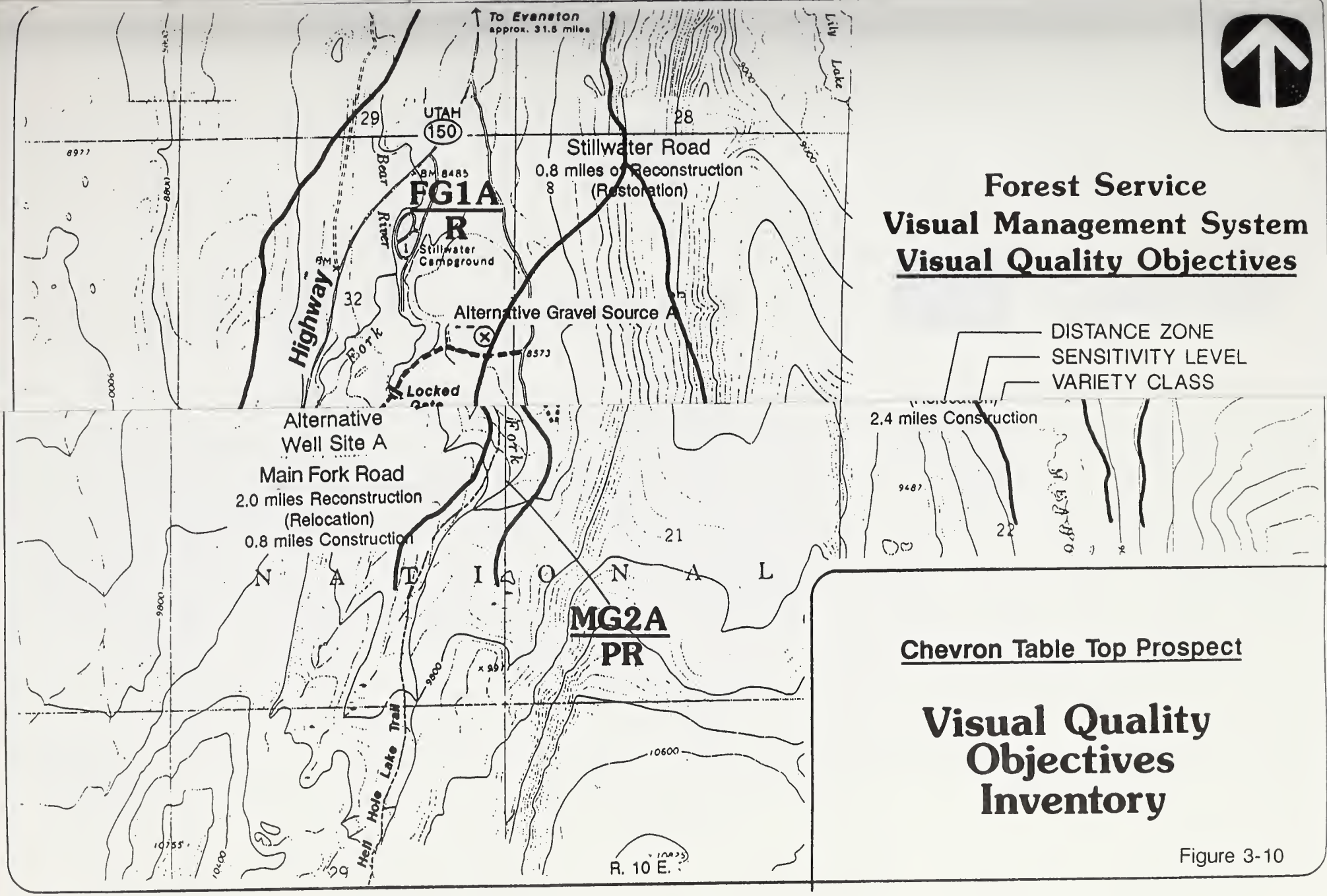
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SCALE IN FEET

SOURCE:
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Chevron Table Top Prospect

Landscape Character Type and Variety Class

Figure 3-9



Forest Service Visual Management System Visual Quality Objectives

Chevron Table Top Prospect

Visual Quality Objectives Inventory

Figure 3-10

Forest Service Visual Management System Visual Quality Objectives

DISTANCE ZONE
SENSITIVITY LEVEL
VARIETY CLASS

MG2B
M

VISUAL QUALITY OBJECTIVE

1000 0 1000 2000
SCALE IN FEET

SOURCE:
U.S.G.S. 7.5 MINUTE QUADRANGLES ENTITLED "DEADMAN MOUNTAIN, UTAH - WYOMING" AND "CHRISTMAS MEADOWS, UTAH" BOTH SHEETS DATED 1972.

To Evanston approx. 31.6 miles

UTAH 150

Stillwater Road
0.8 miles of Reconstruction
(Restoration)

FG1A
R

Stillwater Campground

Alternative Gravel Source A

Locked Gate

Penninsula Road
2.1 miles Reconstruction
(Betterment)

Alternative Gravel Source B

MG2A
PR

Alternative Gravel Source C

End of Existing Road

Jeep Trail

Main Fork Road
2.4 miles Primitive
(Obliterete end Revegetate)

Proposed Road

FG1A
R

Hayden Fork Campground

To Kamas approx. 43.0 miles

Christmas Meadows Summer Home Area

Christmas Meadows Campground

MG2B
M

Water Pipeline Alternative

Alternative Well Site A

Main Fork Road
2.0 miles Reconstruction
(Relocation)
0.8 miles Construction

Alternative Well Site B

FG1A
R

Main Fork Road
2.0 miles Reconstruction
(Relocation)
2.4 miles Construction

MG2A
PR

MG2B
M

MG2A
PR

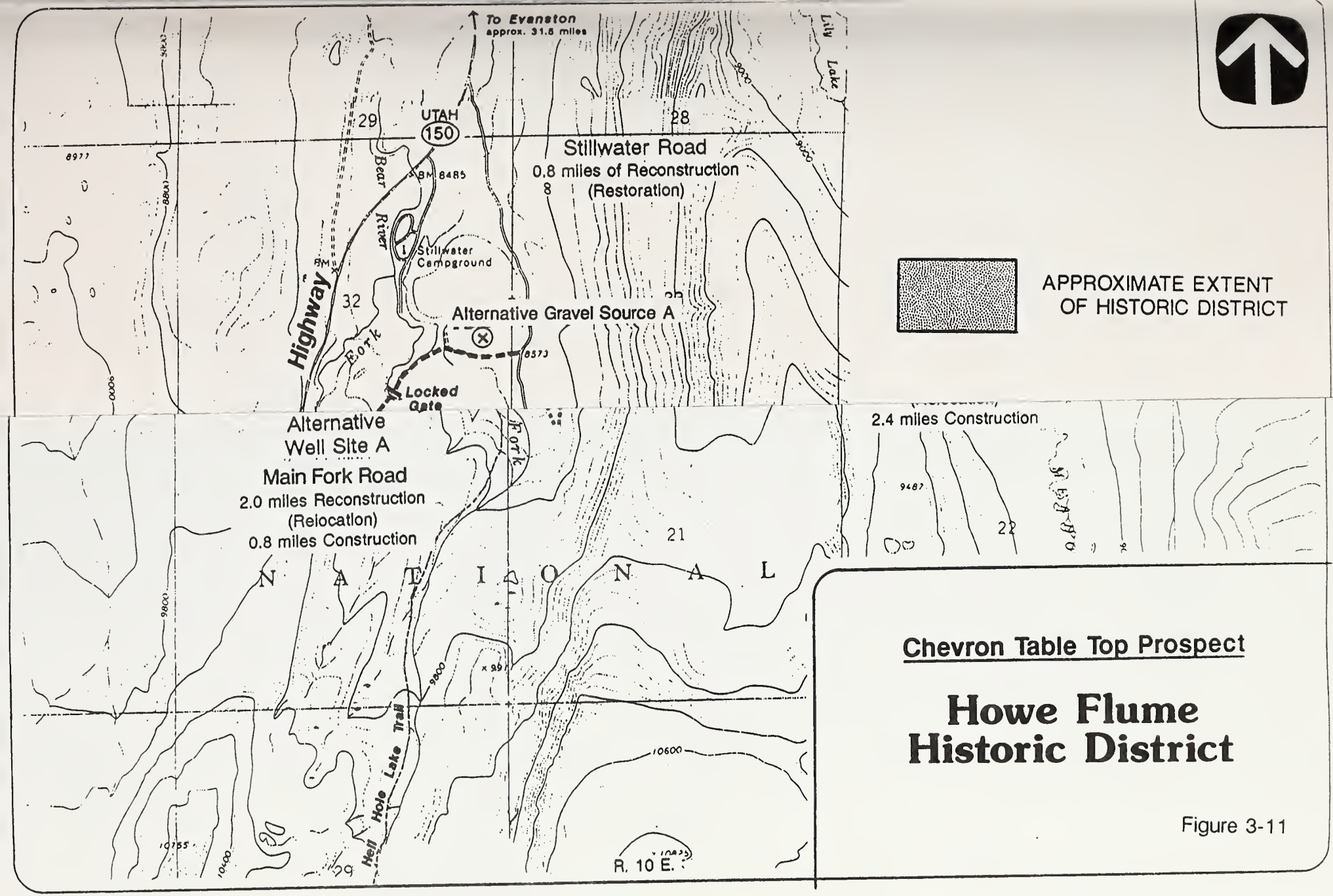
T. 2 N.
T. 1 N.
R. 10 E.

WASATCH NATIONAL

Chevron Table Top Prospect

Visual Quality Objectives Inventory

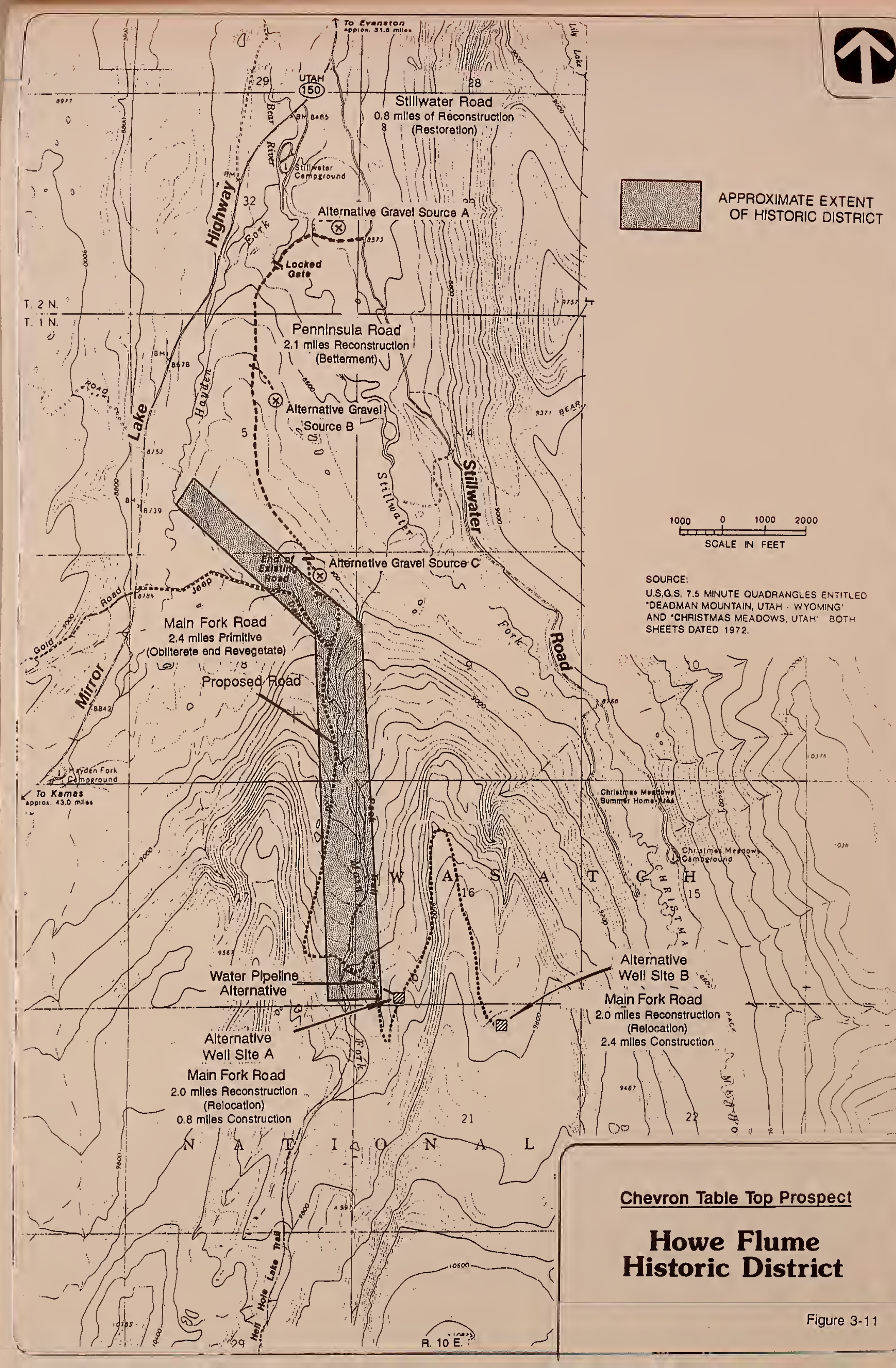
Figure 3-10



Chevron Table Top Prospect

Howe Flume Historic District

Figure 3-11



Chevron Table Top Prospect

Howe Flume Historic District

Figure 3-11

CHAPTER 4 – ENVIRONMENTAL CONSEQUENCES

CHAPTER 4 – ENVIRONMENTAL CONSEQUENCES

This chapter provides a description of the potential consequences, or impacts, to the natural, human, and cultural environments of implementing each alternative. It is the scientific and analytic basis for the comparison of alternatives in Chapter 2.

Impacts are defined as modifications to the environment, as it presently exists, that are brought about by an outside action. Impacts can be beneficial or adverse, short or long term, and either direct or indirect. Short-term impacts are defined as those changes to the environment during construction that would generally revert to preconstruction conditions at or within a few years of the end of construction. Long-term impacts are defined as those that substantially remain for the life of the project or beyond. Direct impacts are those that are immediate results of construction activities and indirect impacts are those associated with the project as a result of construction activities. An irreversible or irretrievable commitment of resources would occur when the current or potential productivity of those resources are consumed, committed, or lost and can never be regained. Cumulative impacts are those that increase in effects by successive additions. Generally, potential impacts were assessed considering the natural, human, and cultural environmental resources present, the duration of the impact, construction methods of the proposed action that would occur for each alternative, and appropriate mitigation and Forest Service standards and guidelines.

For each resource, discussion begins with an explanation of significance criteria. The significance criteria define the threshold or magnitude at which an impact is considered to be significant to the environment, thus warranting further consideration and/or specific measures to mitigate the impact to a lesser impact.

Also for each resource, compatibility with Forest Service prescriptions, standards and guidelines are discussed. The Forest Plan serves as a guide for all natural resource management activities and establishes management direction, prescriptions, standards, and guidelines for the National Forest System lands administered by the Supervisor of the Wasatch-Cache National Forest. As mentioned in Chapter 1 of this document, this EIS is tiered to the Forest Plan and the Forest Plan EIS. Forest-wide goals, objectives, standards, and guidelines are found in Chapter IV of the Forest Plan, pages IV-1 to IV-50. In addition, the Forest Plan provides management prescriptions for each management area of the Forest. This proposed project is located in the North Slope Management Area (refer to Forest Plan, page IV-74). Incompatibility with any of the established standards may be justification for rejecting an alternative or requiring additional mitigation measures to avoid significant impacts. All proposed project activities comply with the standards and guidelines developed for the Forest Plan.

Impacts specific to the proposed action are then discussed followed by discussion of the alternatives. Where appropriate, mitigation measures were developed and recommended to reduce adverse impacts to an acceptable level. Some of the mitigation measures are beyond the regulatory authority of the Forest Service or BLM and would be implemented voluntarily by Chevron. The impacts remaining after mitigation (known as residual impacts) are reported in this document. A summary of mitigation measures is provided in Appendix D, monitoring in Appendix D and E, and erosion control and reclamation measures in Appendix E.

Cumulative effects are then addressed for each resource. Cumulative effects result from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions. Cumulative effects can result from individually minor, but collectively substantive actions taking place over a period of time.

The Forest Plan includes a timber action schedule on page IV-374 showing a list of potential timber sales for the first 10 years of implementation of the Forest Plan. One sale listed is the Main Fork Bear which is roughly situated in Sections 19, 20, and 21 in the project area. While no site specific proposal has been

initiated it is included in the most current implementation schedule, it is within the suitable timber base and has the potential to be harvested under current Plan direction. Generally, the plan estimated that 385 acres would be in the sale area and 3 miles of road would be needed. A timber sale in this area would most likely be accessed by the road constructed for this proposed oil and gas well.

The CEQ regulations require us to analyze the cumulative effects for all three types of actions--similar, connected and cumulative. For the purposes of this analysis the Main Fork Bear is considered a cumulative action for which the effects will be disclosed.

GEOLOGY

Significance Criteria Geologic hazards (such as rock falls) resulting from the proposed action are considered significant. The loss of any fossils that would have contributed to knowledge of prehistoric species is considered significant.

Applicable Forest Plan Direction No Forest-wide or Management Area direction for geological resources, per se, is documented in the Forest Plan. Forest-wide management goals include the integration of exploration and development of mineral and energy resources on the Forest with the use and protection of other resource values and administering the mineral resources of the Forest to provide for the needs of the American people. Management Area direction includes allowance of mineral development while protecting the scenic, recreation, water, and other resources.

Impacts Common to All Action Alternatives

Based on available information on general geology, known paleontological resources, mineral resources, and geologic hazards (rock falls), no adverse impacts to these resources are anticipated for any alternative. Gravel that would be extracted for road and well pad surfaces is a common resource and would not be a significant loss. One area mapped as a rock fall area is south of the project area. Paleontological resources are not expected to be adversely affected since surface disturbance resulting from the project would be minimal and fossil vertebrates are not known to be a significant occurrence in the area.

The drilling, casing, cementing and blowout prevention programs have been designed to prevent potential impacts from unexpected lost circulation or high pressure zones if encountered. The drilling program has been reviewed by the BLM geologists and engineers and has been determined to contain sufficient design factors to prevent unexpected lost circulation or high pressure impacts. Adherence to the operating regulations and orders would also afford protection against such impacts.

Effects of Each Alternative

No Action Under this alternative, the environment would remain as it exists with no well site or road constructed.

Alternative Well Sites A or B No adverse impacts to the geological resources addressed in this section are anticipated.

Road Management Alternatives No adverse impacts to the geological resources addressed in this section are anticipated as a result of implementing any of the road management alternatives.

Mitigation

Although paleontological resources are not anticipated, it is recommended that, if a paleontological resource is encountered during construction or other project-related activity, the Authorized Officer be contacted immediately for appropriate mitigation of the potential impact to the resource.

Cumulative Effects

There are no reasonably foreseeable activities planned beyond those addressed in this section except for the Main Fork Timber Sale (see Timber Section of this Chapter). There are no cumulative effects anticipated from the timber sale on the geological resources.

SOILS AND LANDFORMS

Significance Criteria Potential effects on soils and landforms were considered significant if:

- the loss of soil (over that occurring naturally) and reduction in soil productivity and stability due to land disturbance prevented reclamation to near-preconstruction conditions
- following construction, more than five years is required to reestablish ground cover to preconstruction densities
- erosion rates and/or land instability is increased to a level jeopardizing the natural integrity of the landscape or resulting in loss of support from roads or ancillary facilities
- construction occurs on slopes in excess of 40 percent – unless shown to be feasible with specific mitigation

Impacts from the proposed activities are anticipated to be insignificant. Mitigating measures that would be implemented to control erosion and improve reclamation potential are addressed in Appendix E, Erosion Control and Reclamation. Construction on 40 percent or greater slopes would be limited to a portion of the road (about .5 mile) that follows the side of the ridge up to Alternative Well Site B.

Applicable Forest Plan Direction With regard to watershed management, Management Area direction requires design and implementation of practices to reestablish soil, hydrologic, and vegetative conditions sufficient to secure and maintain favorable water flows and identify and adopt soil and water conservation measures. Standards and guidelines require avoidance of soil disturbing activities on steep, erosive and unstable slopes; and in wetlands, floodplains and meadows.

Impacts Common to All Action Alternatives

Potential impacts to soils would result from surface disturbing activities; primarily the well pad, road work, and gravel source. Construction during conditions when the ground is frozen or wet and muddy would add addtiional impacts to soils, soils could not be compacted properly. Compaction and grading cannot be properly completed during frozen ground or wet conditions. If constructed, the water pipeline would be installed above ground except at the location where the pipeline would be buried to cross under the road to the well pad site. Impacts may include increased runoff and erosion, loss of topsoil, increased contribution of sediment to streams, and decreased soil and vegetation productivity. The removal of vegetation and the exposure and steepening of cut and fill slopes as well as alteration and compaction of soils during construction would increase runoff and erosion. The adverse alteration of soil chemical and physical characteristics by construction can decrease soil and vegetation productivity.

The amount of erosion resulting from construction activities cannot be accurately predicted or quantified. Erosion is a site-specific process and is dependent upon many interacting variables including topography, climate, vegetation, and inherent soil properties and conditions. The extent that project activities alters these factors, along with mitigation measures to reduce erosion, and timing that these measures are applied complicate rate of erosion or yield predictions. Climatic factors (intensity, duration, and timing of storms) further complicate predictions. For these reasons, soil loss is not predicted for this analysis. Rather, potential for reclamation has been identified (Table 3-1).

Overall, the chance for impacts to soils to occur is higher in areas of limited reclamation potential (that is; steep slopes, unstable slopes). Such sensitive areas (refer to Chapter 3, Soils) require avoidance or more intensive engineering, construction, erosion control, and reclamation practices to minimize impacts.

The potential for slope failure increases for major excavations requiring extensive cut and fill operations. Where construction on steeper slopes is necessary, cuts and fills would be required. Sidehill cuts and fills on slopes greater than 25 percent (15 degrees) would require extensive sidewall cuts that may cause slope instability and could result in large volumes of soil and rock debris being sidecast onto areas otherwise undisturbed. In such cut areas, replacement of sidecast material, regrading, and revegetation requires some additional effort.

During construction and prior to implementation of reclamation efforts, some small amount of soil losses occur. In addition, some small areas may require follow-up reclamation efforts until stabilized. Generally, impacts on soils would be minimized using best management practices and where successful reclamation, revegetation, and erosion control measures are implemented.

The well pad would be gravel covered and has been designed so that runoff from the well pad would be diverted into a ditch surrounding the well pad. The road also would be gravel covered and has been designed with roadside ditches for diversion of runoff.

Indirect impacts of soil disturbances may occur from loss or decrease in vegetation productivity and potential for increased stream sedimentation. Most impacts to vegetation would be considered short term since all disturbed surface areas not required for operation of production would be reclaimed and reclamation is expected to occur during the first fall following drilling. Understory vegetation would return to near-preconstruction conditions within two to five years after reclamation. In areas where steep-cut slopes are required, which expose extensive areas of subsoil or cause heavy erosion, revegetating these areas may be difficult or impossible and may result in long-term loss of vegetation productivity. Impacts to overstory vegetation are long-term since reestablishment of these species requires many years.

Potential impacts from increased stream sedimentation would be short term and may occur in areas where road work is adjacent to live streams (Main Fork). The bridge across the Main Fork has been designed specifically to reduce the potential for disturbing adjacent vegetation and soils.

The water pipeline would be on the surface and soil disturbance would be minimal as the vegetation would not be uprooted. The majority of construction is far enough away from live streams that increased sedimentation is not anticipated.

Effects of Each Alternative

No Action Under this alternative, the environment would remain as it presently exists with no well site or road constructed and no reclamation of the primitive road that crosses the Hayden Fork. Currently, erosion from rutting along the road and the in-stream road crossing contribute to sedimentation in the waters of the Hayden Fork. If an action alternative is implemented, the primitive road would be reclaimed.

Alternative Well Site A Construction of the well pad (3.43 acres), road work (12.98 acres), and gravel source site (.5 acre) would result in 16.91 acres of soil disturbance (Table 3-1). Inherent erosion hazards are low to moderate at this alternative (Table 3-1 and Figure 3-1). All of the disturbance associated with this alternative would be on slopes less than 40%. Along the road localized areas of cuts and fills and areas of high water tables (Figure 3-1, Land type B) may occur. However, potential for soil erosion would decrease as exposed soils revegetate and/or where erosion control measures are implemented. If the well is abandoned, the entire pad (3.43 acres) would be reclaimed and if the well is a producer, all but 1.5 acres supporting production facilities would be reclaimed.

Alternative Well Site B Construction of the well pad (3.5 acres), road work (19.76 acres) and gravel source site (.5 acres) would result in 23.76 acres of soil disturbance. Inherent erosion hazards are low to moderate at this site (Table 3-1 and Figure 3-1). However, on Landtype M12 along the ridge where the road would climb to Alternative Well Site B (shallow, mountain slope lands), slope gradients range from 35 to 70 percent, erosion and stability hazards are moderate to high, construction hazard potential is high, and reclamation constraints are moderate to high. Long duration of snow pack, steep slopes, seeps, short growing season, and avalanche and landslide potential are the major hazards in this area. At the well pad location, an extensive wet meadow complex (Landtype B2, Wet Meadow Lands) with organic clayey soils and pond and marshes poses high water table, low soil bearing strength, and high soil plasticity hazards.

Road Management Alternatives In addition to the affects caused by road and drill pad construction there are three road management alternatives.

Open Road Management Alternative Until construction and drilling operations are finished, traffic would be prohibited to public travel. Once drilling is completed, public use will be allowed but drilling associated traffic would decrease. If the well is a producer, 2 to 3 trucks per day would hauling of oil to Evanston. Therefor, production and hauling of oil would continue. Road construction design criteria have been developed to address this type of traffic. During construction and any reclamation activities, we can expect some movement of soils until vegetation becomes established, however, graveling the road surface prior to use will also control soil loss from the road surface. The old jeep trail would be closed and reclaimed. There is some sediment movement off of this road which would be reduced. Impacts to soil and landforms would be insignificant.

Closed Road Management Alternative Impacts would be similar to that discussed above, however, public access would not be allowed once drilling has been completed. Traffic necessary for production and transportation of oil would be allowed to continue. Road construction design criteria have been specifically included to address impacts to soils and landforms. Soil movement on the existing jeep trail would be brought under control.

Reclaimed- or Rehabilitated-Road Management Alternative If once the well is drilled and is unsuccessful, the new road would be put back to as near natural conditions as reasonable back to the end of the existing Peninsula Road. During construction and again during reclamation, we could expect some soil movement, however, the location of the road away from the stream will reduce the risk of significant amounts of sedimentation.

Mitigation

Generally, mitigation measures attempt to control soil erosion and sedimentation, preserve preproject soil environment, and avoid water quality deterioration. Construction will not be allowed during inclimate weather conditions. This includes periods of extreme muddy or snowy conditions or times when the ground is frozen. Refer to Appendix B (Surface Use Plan), C (Road Construction Design Criteria), and E (Erosion Control and Reclamation).

Cumulative Effects

There are no reasonably foreseeable activities beyond those addressed in this section except for the Main Fork Timber Sale (see Timber Section of this Chapter). Under the Open Road Alternative, public travel will be allowed at least through the summer months along the Peninsula Road and along the new Main Fork Road. Cumulative effects to soils and landform should not be significant as long as the road drainages and gravel surfacing is maintained. Travel under the other road management alternatives prohibits public travel. Cumulative effects to soils and landform would not be significant. If other actions are planned in the future, further environmental review would address cumulative effects.

WATER RESOURCES

Significance Criteria Impacts to ground water would be considered significant if:

- project activities resulted in a violation of State water quality standards
- project activities interfered with water flow at existing water wells or springs in the vicinity of the project

Because of the distance between the project and water wells and springs currently being used, no adverse impacts to the quantity or quality of the water from the wells and springs are anticipated. Chevron has implemented a program to monitor the quality of the spring water, which serves as domestic water to the Christmas Meadows summer home area, to ensure that the existing quality of the water remains. Chevron's proposed casing and cementing program complies with all applicable regulations designed to protect ground water. Monitoring of water quantity is not technically feasible.

Impacts to surface water would be considered significant if:

- long-term sediment loads in streams increased more than one percent
- stream morphology or characteristics were changed so that flood flows were impeded
- riparian or wetland areas are disturbed or removed in violation of Section 404 of the Clean Water Act
- loss of riparian or wetland areas at a single location or the combination exceeds one acre
- any drilling fluids, drilling wastes, petroleum products or byproducts contaminated area streams in violation of Federal or State regulations
- there is nonpoint source runoff that has potential of carrying drilling fluids, fuels, or toxic substances to area streams

Bridges would be used to cross streams and precautions would be taken during construction so that sedimentation is minimized. Changes in stream morphology would not result from the proposed action. Spill prevention, control, and containment measures have been incorporated into the design of the project. The well site has been designed to result sediment control. All precipitation onto the well pad would be directed and contained in a runoff containment ditch. Nonpoint source runoff would be adequately contained.

Wetlands would be affected by the project. During July of 1992, survey, delineation, and mapping of the wetlands within the project area were completed; recommendations for mitigation were made in coordination with the Army Corps of Engineers and the Forest; and the results were documented (refer to Appendix J - Wetlands Delineation and Analysis Report). Prior to construction, the recommendations and resulting design work has been reviewed for approval by the Army Corps of Engineers and the Forest. The Army Corps of Engineers has verified that this proposal is authorized by Nationwide Permit Number 26.

No significant impacts to surface water are anticipated.

Applicable Forest Plan Direction For surface water, Forest-wide management goals include that existing water quality on all surface waters of the Forest should be maintained to comply with State water-quality standards and anti-degradation policy. Management Area direction encourages protection of water quality allowing no resource development activities that degrade water quality below Federal, State and local standards. Standards and guidelines state that soil-disturbing activities on steep, erosive, and unstable slopes; and in wetlands, floodplains, and meadows should be avoided. Also, management activities will not be banned from riparian areas, but will be monitored to prevent deterioration of riparian areas or degradation of water quality. An objective of the Forest is to stabilize streambanks and eroding landslide surface soils through structural and vegetative measures (Forest Plan, page IV-97). No standards and guidelines are included for ground water in the Forest Plan.

Impacts Common to All Action Alternatives

Ground Water Ground water would not be affected by well siting, road management, or gravel source alternatives. The only project component with the potential to affect groundwater would be the exploratory oil well: (1) potential contamination of ground water aquifers from materials used onsite during the drilling program, (2) communication between the wellbore and potable water aquifers, and (3) draw down of springs and adjacent water wells from water withdrawals from the proposed water well. Each of these potential impacts are considered in the project design.

The reserve pit on the well pad is to be lined with an artificial liner to protect shallow ground-water aquifers from contamination. The proposed casing and cementing program for the well is designed to protect ground water aquifers. The casing and cement provide adequate protection against fluid communication between the well hole and the formations through which the casing passes.

Drilling the exploratory oil well would require water for mixing the drilling fluids and for dust control. Water would be provided from a well drilled on the well pad. The withdrawal of this water would not impact any wells in the area or springs that are used for domestic water. Water withdrawals would be needed only during construction and drilling, a 150-to-200-day period.

Surface Water The primary impacts that could occur to surface waters, including wetland areas, would be from construction activities (roads, well pad, gravel pit and bridge). These activities would disturb soils and vegetation that could result in degradation of water quality from increased soil erosion and sedimentation. Road construction activities near or at the stream could disrupt the normal hydrology, stream banks and stream beds, resulting in short-term increases in sediment. Sedimentation of surface water also could occur where water runoff flows over exposed surfaces. Sediment entering intermittent streams (such as the one north of Alternative Well Site B) during periods of no water flow would result in minimal impacts. However, when water returns to the drainage, short-term sediment influx would occur.

No project-associated structures (for example; water pump for pipeline or haul truck, water diversion structure) would impede flood flows of the Main Fork.

Degradation of surface water also could result from leaks or overflows from pits or tanks or from spills of fuels, drilling fluids, and oil during production or transport. All project activities have been designed to reduce the potential for these common types of impacts to occur. Channel sedimentation (in sufficient amounts) reduces water transport and flood carrying capacity for channels and culverts, can destroy riffle-pool sequences, simplifies channel bottom type, and reduces productivity at all tropic levels in the stream (Karr and Schlosser 1978, Stratton 1985).

In the unlikely event of a blowout or uncontrolled flow from the well, surface water could be degraded by fluids from deep rock formations. The extent of degradation would depend on the characteristics of the

formation fluids, the volume of the uncontrolled flow, and it's duration (time required to stop the flow). This is an unlikly event since a study of formation pressures is conducted and the drilling plan designed to compensate for anticipated pressures. The weight of the drilling fluid is designed and continuously monitored to ensure that it's hydrostatic pressure equals or exceeds the formation pressure, thereby holding formation fluids within the formation. Also, Onshore Order 2 requires the use special equipment (Blow Out Preventor Equipment) to enable the well to be controlled even when unanticipated pressures are encountered. Monitoring equipment is also required to detect volume changes in the drilling fluid being used, which indicates either a loss or gain of fluids returning from the well bore.
Construction of the road across intermittent streams and drainages would not increase sediment since these would be crossed during the time of year when they are dry or there is very low flow. Crossing of small perennial streams would result in short-term, localized suspended sediment a short distance downstream. Chevron will conduct a water-monitoring program to test the water of the Main Fork before, during, and after construction activities. Flow rates will be recorded and water samples will be tested for chemical pollutants, temperature, suspended sediment, and dissolved oxygen.

The well pad is designed to control sediment produced from runoff. Runoff from the well pad would be contained in a drainage ditch to preclude sediment from reaching undisturbed areas and preclude runoff from surrounding areas from reaching the disturbed areas. The well pad and road would be gravel covered to reduce contribution to off-site sedimentation from these sources. The bridge for crossing the Main Fork has been designed to minimize disturbance to the stream, and the soil and vegetation adjacent to the stream to reduce the potential for sedimentation (refer to Chapter 2, Alternatives Considered in Detail, Road Upgrade and Construction).

Most of the wetlands delineated in the project area (Dames & Moore 1992) would not be impacted by the construction operations of the road, well pad, and ancillary facilities. In Sections 8, 17, 16, and 21 the road would be relatively close (10 to 15 meters) to several, generally small (5 by 15 meters) wetland seeps and may cross drainages to or from the wetland areas. Most of these would be avoided. The road would have to cross one wetland area in Section 17. Refer to Appendix J.

Effects of Each Alternative

The potential for ground-water degradation is low for any of the alternatives because of the requirements of Onshore Order # 2 ensures protection of freshwater aquifers to the extent practicable. This is done through the casing and cementing program, and plugging procedures which are discussed under "Drilling and Completion" on page 2-8 of this FEIS, therefor only surface water is discussed below.

No Action Under this alternative, the environment would remain as it presently exists with no well site or road constructed and no reclamation of the primitive road that crosses the Hayden Fork. Currently, erosion from rutting along the adjacent primitive road and the in-stream crossing contribute to sedimentation in the waters of the Hayden Fork. If an action alternative is implemented, the primitive road would be reclaimed.

Alternative Well Site A Natural background sediment yield for the various landtypes traversed by this alternative is .20 acre feet/square mile/year (.6 tons/acre/year) (Figure 3-3). Sediment yield from road work was calculated to be about .22 acre feet per square mile per year, (.66 tons/acre/year), a ten percent increase over natural background levels. However, this figure does not reflect mitigative measures or the restricted area of disturbance (16.91 acres).

Considering the low-flow conditions during the proposed construction period, the effects would result in minimal to low short-term sedimentation at the stream crossing as well as a short distance downstream. Best management practices (BMPs-Forest Service Handbook 2509.22, Soil and Water Conservation

Handbook) would be implemented and mitigation measures (Appendix D) would be followed so that Forest Service standards for watershed and water quality are achieved.

Even if the unmitigated sediment load increase would exceed one percent, the impact would be short term and therefore would not meet the significance criteria. With implementation of Forest Plan standards and guidelines and mitigation measures, there would be little or no sediment load after one year.

Alternative Well Site B Natural background sediment yield ranges from less than .1 acre feet/square mile/year (.3 tons.acre/year) to .39 acre feet/square mile/year (1.17 tons/acre/year) for the various landtypes traversed by this alternative. Sediment yield resulting from road work and well pad construction could be .22 acre feet/square mile/year (.66 tons/acre/year). Road and well pad sediment is considerably less than natural levels on steep slopes (.22 versus .39 acre feet/square mile/year) because road and well pad gradients would be less than eight percent and finished surfaces would be massive and compacted. The figures used for sediment yield results (calculated using the PSIAC model) do not reflect mitigative measures or area of disturbance.

As with Alternative Well Site A, construction during low-flow conditions would result in minimal to low short-term impacts to surface waters at the stream crossing as well as a short distance downstream. Best management practices would be implemented and mitigation measures would be followed so that Forest Service standards for watershed and water quality are achieved.

Alternative Well Site B is located in a wet meadow, the area of which was surveyed and mapped in July of 1992. Constructing a well pad at this site would require filling at least one acre of palustrine wetland.

Road Management Alternatives Sediment/erosion caused by the road being open or closed will not differ from that discussed in Alternative Well Site A and Alternative Well Site B and the section on Soils and Landforms.

Under the Open Road Management Alternative, we could expect increased public use for recreation (camping, fishing, etc.). Pressure on surface waters may increase and possibly result in impacts to the stream and water-quality if improper uses occur in the stream.

Under the Closed Road Management Alternative, we do not anticipate increased pressure on surface waters from increased recreational use.

Mitigation

For ground water, mitigation has been incorporated into the project design (or example; casing and cementing of the well bore hole, berms, and structural controls at well site to contain possible spills, inspections and monitoring of site facilities, reserve pit liner, and proper residuals management). Upon abandonment, well plugging design and Bureau of Land Management requirements would isolate and protect aquifers.

For surface water also, mitigation has been incorporated into project design. Major surface disturbance, such as the well pad, would not occur within 500 feet of the Main Fork. Except for the crossing of the Main Fork, roads would be located such that the fill slope, or in the case of level ground the edge of the road, would be at least 100 feet from the edge of surface waters. Existing roads would be used to the extent possible - road design and layout would be such that road density would be minimized. Sediment barriers would be used as needed to reduce potential sedimentation. The well site would have adequate spill protection. Chevron has implemented a water-monitoring program. Bridge construction at the crossing of the Main Fork would avoid disturbance of riparian vegetation. To adequately buffer the stream from

sediment, a buffer strip of upland vegetation (not riparian) would be left between areas of project activities (road, turnouts) and the stream. A temporary bridge would be constructed across the Main Fork to move equipment to the east side and, once across, a permanent bridge would be constructed. Bridge construction or stream crossing would be during low flow periods, most likely July or August.

A Clean Water Act (Water Pollution Control Act) Section 404 permit is required for dredge and fill activities that affect wetlands and waters of the US. Impacts to the wet areas on each side of the Main Fork at the crossing would be minimized using best management practices to curtail siltation and sedimentation.

Wetlands would be avoided wherever possible and impacts minimized when avoidance is not possible. (Refer to Appendix J.) The road would be placed so that it does not intercept or redirect drainage to or from wetland areas. Installation of culverts would be specified where needed to convey water across the road. Means of spreading drainage from the road would be implemented (for example; lateral ditch and outlets) and sedimentation barriers (for example; straw bales, slash) would be used at the base of the road to protect downslope wetlands from soil erosion.

As previously mentioned, the road would have to cross one wetland in Section 17. The wet area consists of springs and a small drainage that extends across the slope from a marsh toward the Main Fork. The natural drainage would be maintained with a French drain, which would convey water beneath the road from west to east. Construction of the road in this area would fill approximately 3,000 square feet (.07 acre) of wetlands (22-foot road width across 133 feet of wetlands). Replacement of the area lost has been designated as part of project development plans and has been approved by the Army Corps of Engineers. The most practical means to offset wetland losses is to reestablish wetlands on the abandoned segment of the Main Fork Road during reclamation measures that are specified for this road as part of project requirements. Areas (depressions) of this road that occur near the Main Fork currently hold water year-round. Wetland reclamation measures include ripping operations to reduce compaction and transporting soil and plant material to the area from other wetland sites that would be affected. Other methods of offsetting wetland losses include channeling drainage from the road into existing wetlands or into constructed basins to hold water. Reclaiming wet areas of the abandoned segment of the Main Fork Road and expanding existing wetlands with additional water would require less effort than establishing new wetlands. Conservative measurements indicate that approximately 13,000 square feet of wetlands would be reestablished this way.

The impact of filling one acre of palustrine wetlands at Alternative Well Site B would require mitigation through creation of wetlands of the same function and value, or by establishing additional acreage through reclamation of degraded wetlands. Additional water would be needed in order for new wetlands of this size to be developed on site.

Cumulative Effects

There are no reasonably foreseeable activities beyond those addressed in this section except for the Main Fork Timber Sale (see Timber Section of this Chapter). If other actions are planned in the future, further environmental review would address cumulative effects.

VEGETATION

Significance Criteria Impacts to vegetation were considered significant if:

- there is loss of a sensitive plant species in violation of the Federal or State regulations
- more than five years is required to reestablish ground cover to near-preconstruction conditions
- old growth stands will be a minimum of 160 contiguous acres

A survey for the brownie ladyslipper was conducted during the June of 1992. No occurrences of the brownie ladyslipper were discovered in the project area.

Application of Forest Plan Direction Management Area direction encourages protection of sensitive plant species. Standards and guidelines encourage protection of habitats of sensitive species from adverse modification or destruction and avoidance of surface disturbances where these plants grow.

Impacts Common to All Action Alternatives

The primary impacts to vegetation from the proposed project would be the vegetation production loss during construction. Potential impacts from project activities include (1) reductions in vegetation production after reclamation due to soil alterations from disturbance or from the additions of contaminants from potential spills, (2) alteration of vegetation habitat type from removal of overstory species and revegetating with understory species (for example, grasses and forbs), and (3) noxious weeds may invade some disturbed areas.

If this well does not produce commercial quantities of hydrocarbons most impacts to vegetation would be considered short term, since all disturbed areas would be reclaimed and reclamation is expected to occur the first fall after drilling. If the well is a producer, all except 1.5 acres of the pad would be reclaimed. Revegetation of understory species should return to near-preconstruction conditions within two to five years after reclamation. In areas where construction requires steep-cut slopes, which expose extensive areas of subsoil or cause heavy erosion, revegetating these areas would be difficult or impossible and may result in loss of vegetation productivity. Impacts to overstory vegetation are more long-term since reestablishment of these species requires many more years.

Wetlands are addressed with surface water in a previous section and in Appendix J.

A beneficial effect would result from the rehabilitation of 2.33 acres once the segment of the Main Fork Road has been relocated. In addition, as part of the rehabilitation, it has been recommended that wet areas in the roadway would be developed, established, and managed as wetlands as a measure to offset losses of wetlands (refer to Figure 4 in Appendix J).

Reconstruction of existing roads to a width of 14 feet would affect vegetation (four feet on each side of the existing roadway) that currently occurs adjacent to the road. This action is predicted to disturb approximately eight feet of additional area. This includes disturbing vegetation by cuts and fill and widening by addition of imported material or raising the grade. Based on the 2.9 miles of road reconstruction, a total of 2.8 acres of existing vegetation would be disturbed by widening activities. Most of this acreage consists of immature lodgepole pine, with a more minor component consisting of willow communities (Table 4-1).

The installation of the above-ground water pipeline would cause vegetation to be crushed; however, since the roots would remain intact, the vegetation would regenerate quickly. The pipeline would be in place only during drilling.

Development of the gravel source would require the removal of some seedling/saplings lodgepole pine from the .5 acre site.

TES Plant Species No occurrences of TES species of plants area were discovered in the proposed project area during the July, 1992, survey.

Old Growth As mentioned in Chapter 3 of this document, a review of the Forest Plan reveals that there is a stand designated for old growth predominantly east of Peninsula Road. The map (Figure 3-5) shows

the existing road passing through the western side of the stand separating approximately 25 acres from the larger portion of the designated stand. Increased traffic as a result of this proposal would aggravate the situation.

According to the capability maps developed for the Forest Plan, there are stands of timber of the same capability classification, as the 25 acre patch in question, directly adjacent to the bulk of the designated old growth stand on the east side of the road. The process to adjust the boundaries of this old growth stand will necessitate a "non-significant" amendment to the Forest Plan.

Adjusting the boundary would improve the effectiveness of the stand for old growth dependent species by creating a contiguous stand, and maintaining 10% of the forested acreage as old growth habitat.

Effects of Each Alternative

No Action Under this alternative, the environment would remain as it presently exists with no well site or road constructed.

Alternative Well Site A The well pad would affect about 3.43 acres that consists primarily of either mature or post- or pole-size lodgepole pine (Table 4-1).

To Alternative Well Site A, approximately 5.7 miles of road construction, reconstruction, and betterment would be required. Based on a road travel surface width of 14 feet, this construction would affect 16.93 acres of vegetation. Most of this acreage consists of post- or pole-size lodgepole pine, although more mature lodgepole pine timber also occurs along the proposed route of the road (Table 4-1).

Approximately 7,500 board feet per acre of timber is considered available in this area. This varies from 5,000 board feet for immature stands to 10,000 board feet for mature stands that are listed as suitable for timber production (Table 4-1) (USDA 1992).

Approximately 12 to 14 acres of mature age class lodgepole pine stands would be removed from a mature status. The reclaimed area would become regenerated age class.

TABLE 4-1
VEGETATION TYPE AFFECTED BY ALTERNATIVE WELL SITE A

Project Action	Vegetation Type[1]	Distance (ft)	Acreage
Road Reconstruction (Restoration and Betterment)	(298) Forbs (meadows) <20 percent slope suitable rangeland	4,600	0.8 (based on 8 feet width)
	(063) Lodgepole pine, <40 percent mature suitable timber	9,200	1.7 (based on 8 feet width)
	(340) Willow <40 percent slopes, suitable rangeland	500	0.2 (based on 8 feet width)
	(070) Lodgepole pine, <40 percent slopes, post/pole suitable timber	100	0.2 (based on 8 feet width)
	Subtotal	15,300 (2.9 miles)	2.8 (based on 8 feet width)
Road Construction and Restoration	(070) Lodgepole pine, <40 percent	9,400	6.7 (based on 30 feet width)
	(068) Lodgepole pine	5,400	3.7 (based on 30 feet width)
	Subtotal	14,800 (2.8 miles)	10.2 (based on 30 feet width)
Alternative Well Site A	(067) Lodgepole pine, <40 percent slopes mature w/o understory suitable timber	-----	3.43
Gravel Source	(068,070) Lodgepole pine, seedlings/saplings to post-pole		.5
	Total	30,100 (5.7 miles)[2]	16.93

Note: 2.33 acres would be rehabilitated as a result of relocating a segment of the Main Fork Road.
[1] Forest Plan, Planning Record, Forest Service 1981.
[2] Includes construction, reconstruction, and betterment.

Alternative Well Site B The area of Alternative Well Site B consists primarily of mature lodgepole pine, but grades into a wet meadow of alpine timothy, tall larkspur, bluejoint reedgrass and sedges, which occupy approximately 2.0 acres of the proposed well site (Table 4-2). Subalpine fir along the wet meadows of bluejoint reedgrass are interspersed among those scattered stands of trees.

To Alternative Well Site B, approximately 7.3 miles of road construction, reconstruction, and betterment would be required. Based on a road width of 14 feet, this construction would affect 24 acres of vegetation. Most of this vegetation consists of mature lodgepole pine, with more minor amounts of smaller-size lodgepole including a stand considered unsuitable for timber on the steep slope approaching the site.

Approximately eight or nine acres of mature age class lodgepole pine would be removed from a mature status. The reclaimed areas would become regenerated age class.

Road Management Alternatives The effects of the road management alternatives on vegetation are discussed under Alternative Well Sites A and B above, except for the Reclaimed-or Rehabilitated Road Management Alternative, which would be revegetated and possibly become a regenerated age class of trees.

TABLE 4-2
VEGETATION TYPE AFFECTED BY ALTERNATIVE WELL SITE B

Project Action	Vegetation Type[1]	Distance (ft)	Acreage
Road Reconstruction (Restoration and Betterment)	(029) Forbs (meadow) <20 percent slope suitable rangeland	4,600	0.8 (8' width)
	(063) Lodgepole pine, <40 percent mature suitable timber	9,200	1.7 (8' width)
	(340) Willow <40 percent slopes, suitable rangeland	500	0.2 (8' width)
	(070) Lodgepole pine, <40 percent slopes, post/pole suitable timber	100	0.2 (8' width)
	Subtotal	15,300 (2.9 miles)	2.8 (8' width)
Road Construction	(070) Lodgepole pine, <40 percent	9,400	6.7 (30' width)
and Restoration	(068) Lodgepole pine, <40 percent	9,600	6.6 (30' width)
	(067) Lodgepole pine, <40 percent mature w/o understory suitable timber	2,000	1.4 (30' width)
	(098) Lodgepole pine, >40 percent mature w/o understory unsuitable for timber		2.5 (30' width)
	Subtotal	23,200 (4.4 miles)	17.2 (30' width)
Alternative Well Site B	(068) Lodgepole pine, <40 percent slopes, mature w/o understory suitable timber	----	1.75
	(070) Lodgepole pine, <40 percent slopes, post-pole suitable for timber		1.75
	Subtotal	----	3.5
Gravel Source	(068,070) Lodgepole pine, seedlings/saplings	----	0.5
	Total	38,500 (7.3 miles)[2]	24.00

Note: 2.33 acres would be rehabilitated as a result of relocating a segment of the Main Fork Road.
[1] Forest Plan, Planning Record, U.S. Forest Service 1981
[2] Includes construction, reconstruction, and betterment.

Mitigation

Mitigation of construction impacts would be achieved primarily through reclamation that includes salvage of existing topsoil during clearing operations, reduction of accelerated soil erosion through best management practices, and maintenance of existing drainage (surface-water flow patterns). Revegetation goals would include establishing a vegetation cover and habitat that is beneficial to the wildlife of the area. Refer to Appendix E, Erosion Control And Reclamation.

Cumulative Effects

There are no reasonably foreseeable activities beyond those addressed in this section except for the Main Fork Timber Sale (see Timber Section of this Chapter). If other actions are planned in the future, further environmental review would address cumulative effects.

WILDLIFE

Significance Criteria Impacts to wildlife would be considered significant if:

- any construction occurs within specified buffer areas of active goshawk nests within the nesting period
- there is one percent or greater loss of crucial habitat

A survey to determine the presence or absence of goshawk nesting was conducted during June of 1992. An active goshawk nest was found in the vicinity of the Peninsula Road. With application of mitigative measures, no significant impacts are anticipated to goshawks or other wildlife species or crucial habitat.

Application of Forest Plan Direction Management Area direction encourages protection and improvement of big game winter range and other critical habitats (Forest Plan, page IV-83) and the coordination of the development of range, timber, oil and gas leasing, and other resources with the needs of wildlife (Forest Plan, page IV-97).

Impacts Common to All Action Alternatives

Impacts on wildlife from project activities would result from removal or alteration of habitats and increased human presence and noise.

Habitat losses are classified as either long or short term. Long-term habitat loss would occur in areas that could not be returned to their original vegetative state. For example, reestablishment of forest cover at a well site would take many decades. Such losses would occur for the proposed project. Short-term loss refers to disturbance that would return to near-preconstruction condition in two to five years from completion of reclamation.

There will be some change in vegetation but not to the extent that it would fragment the forest to the point of reducing the biodiversity of the area. It is likely that conversion of forest habitat to shrub-grass habitat would increase overall habitat diversity and vegetation productivity. The total acres or vegetation types show the small percentage of the area that would change from this action and the Main Fork timber sale. The size of the road and its standard is not expected to create a barrier to seasonal migration or reproductive habitats of species within the area.

Site disturbance would result in the loss of habitat for smaller, less mobile species of wildlife, such as reptiles and small mammals, until revegetation takes place. Actual direct loss in habitat is quite minor considering it will be confined to the narrow confines of road construction and a drill pad approximately four acres in size. Refer to Biological Assessment/Evaluation (Appendix I) for detailed discussions on sensitive species. Displacement of more mobile species to adjacent undisturbed habitats is difficult to predict. However, the term of this displacement would be relatively short given the length of the project activities.

Of greater concern than direct habitat loss is the likelihood that noise and increased presence of humans associated with project activities would displace species such as moose, elk, and mule deer from a larger area than that directly disturbed. Avoidance, by wildlife, of noise and human presence would result in temporary displacement of animals from project locations. The extent of this displacement is not possible to predict when one considers that the response to noise and human presence varies by species and among individuals of the same species. In some cases, after initial exposure, wildlife may habituate to the noise and human presence and begin to reinhabit areas formerly avoided. Further complicating this assessment is the fact that wildlife species are not uniformly distributed throughout the project area.

Numerous studies have examined the effects of human disturbance on moose, elk, and deer (Klein 1974, Irwin and Peck 1979, Ward and Cupal 1979, MacArthur et al. 1982, Hayden-Wing 1990). It is commonly assumed that these effects are detrimental to individuals and populations. However, research on the connections between displacement from preferred habitats and increased stress due to human harassment (unintentional or otherwise) on reproduction, survival, and demographics has been inconclusive. Research results are hindered by the difficulty of separating natural variation in populations from human-caused variations (Bromley 1985). While this analysis addresses such displacement, site-specific extent and effects on wildlife cannot be determined accurately. Information is based on available publications and discussions with local wildlife managers.

Studies by Hayden-Wing Associates (Hayden-Wing 1990) in the Riley Ridge area of Western Wyoming concluded that well field activities did not have a significant effect on either the total number of elk using winter range or on overall harvest of elk on the particular herd. The report concluded that levels of elk decrease near well drilling activities but return to former levels after disturbances are reduced to benign, localized and predictable levels such as during production. This report further states that big game animals (i.e., elk, mule deer, and pronghorn antelope) appear to habituate unless they are harassed and/or hunted.

In addition, increased access into an area increases the potential for human-wildlife interaction ranging from harassment and poaching to legal harvest. Increased traffic on access roads would increase the potential for vehicle collisions with wildlife. Collisions would be most common where roads cross areas where wildlife congregate. Chevron has committed to enforcement of controlled vehicle speeds to reduce substantially the potential for such collisions.

A survey conducted in June of 1992 revealed the presence of an active northern goshawk nest in the vicinity of Peninsula Road. Limited data are available to assist in determining the consequences of the proposed action on the goshawk. However, the Forest believes there is a moderate chance that the adult goshawks would abandon the nest during disturbance from construction. In considering possible mitigation measures, the Forest believed that relocation of the existing road in the vicinity of the nest would result in more impacts to other resources than would justify the road relocation. Since the survey was conducted for this project, one other northern goshawk nest was found during a survey by Forest personnel in a neighboring area (approximately one mile northeast), and a goshawk was sighted in the Christmas Meadows area (which may imply another nest), indicating that a viable population of goshawks occupy the area. To many readers this may seem to indicate a rather sparse population when compared to other bird species. However, the area needed by the goshawk, especially during the nesting and post-fledgling periods are quite large (refer to Appendix I). The goshawk will normally avoid other goshawk territories and space themselves accordingly.

Prior to construction, which is defined as anything involving earth moving or clearing, the nest would be observed, by the Forest Service, for evidence of current occupation. If the nest is being used, mitigation measures would be implemented. The Forest would allow travel on the road, but would require that no road construction within the 420 acre PFA would occur from approximately March through August and the traffic would be restricted. Also, the Forest would require that the nest be monitored throughout the project to note the behavior of the goshawks in response to project activities. If the nest is not occupied, the nest would be avoided during construction and operation activities, and no other mitigation would be required.

As discussed in the Chapter 3, pine martens will forage in openings less than 10 acres in size with a distance to cover less than 300 feet (Hargis, 1991). Under any action alternative, the pad will be approximately 3 acres in size, so it may present pine martens with an opening that has a distance to cover more than 300 feet although still less than 10 acres in size. Due to the large home range size of the pine marten (640 acres), and the unfragmented nature of the land surrounding the proposed project area, pine marten habitat should not be adversely affected.

During the Forest Service survey, Forest personnel surveyed for flamulated owl, goshawk, and three-toed woodpeckers (refer to Appendix I - Biological Assessment/Evaluation). Only the goshawk nest discovery and sighting resulted.

Effects of Each Alternative

No Action Under this alternative, the environment would remain as it exists with no well site or road constructed.

Alternative Well Site A Activities associated with this alternative would be expected to directly impact approximately 16.23 acres (Table 4-3). The general area of the new road to the site and the well site is a known transition habitat (November) for mule deer, elk, and moose. Removal of this habitat would have the greatest potential to affect mule deer, elk, and moose during migration and goshawks that may be nesting in the area.

TABLE 4-3
ACRES OF VEGETATION REMOVED FOR
ALTERNATIVE WELL SITE A

	Riparian	Lodgepole Seedlings	Lodgepole 6-8" Dia.	Lodgepole >8" Dia.	TOTAL
Road Improvements	.2		.2	1.7	2.1
Road Construction	-		6.5	3.7	10.2
Pad Construction	-		3.43	-	3.43
Gravel Source		.5			.5
TOTAL	.2	.5	10.13	5.4	16.23

Direct impacts appear more related to the time of construction rather than the loss of lodgepole habitat (a habitat that constitutes a very small percentage in the project area). Deer, elk, and moose would be most susceptible to habitat disturbances during migration season, especially fall/winter when resources are scarce. Construction activities are presently scheduled for Summer of 1994; therefore, should be avoided during the period of November 1 to 30, a period important particularly to elk for migration (USDA 1991). However, scheduling construction or drilling activities to avoid the November period may not be feasible due to the weather and/or the limited time remaining on the lease. The Evanston Ranger District has indicated that because construction and drilling activities would occur through only one season and would not affect the populations substantively, Forest personnel do not believe there is much reason for concern. Also, traffic in the area during that time would be restricted to authorized Chevron and agency vehicles.

Beneficial impacts may be realized in areas that are revegetated or permitted through natural succession to reclaim disturbed areas. Such areas include shoulder and cut and fill areas associated with the new road where natural vegetation is likely to occur, areas revegetated in association with road closures, and areas recontoured and reseeded as a result of reclamation of the area of well pad not needed for production purposes. In a region characterized by close, dense stands of lodgepole, areas that provide

early successional stage vegetation potentially enhance forage opportunities for moose, elk, and deer. Reducing the density of lodgepole stands also may benefit goshawks whose hunting capabilities are restricted in areas of dense timber.

Alternative Well Site B Impacts, both direct and indirect, are expected to be similar to those described for Alternative Well Site A with two exceptions. The amount of affected habitat would be approximately 23.3 acres (Table 4-4) and the alternative well site is located on a lodgepole plateau and wet meadow in the midst of an important migration corridor for deer, elk, and moose (UDWR 1991a).

TABLE 4-4
ACRES OF VEGETATION HABITAT REMOVED FOR ALTERNATIVE WELL SITE B

	Riparian	Lodgepole Seedlings	Lodgepole 6-8" Dia.	Lodgepole >8" Dia.	TOTAL
Road Improvements	.2		.2	1.7	2.1
Road Construction	-		6.7	10.5	17.2
Pad Construction	-		1.75	1.75	3.5
Gravel Source		.5			.5
TOTAL	.2	.5	8.65	13.95	23.3

Road Management Alternatives Approximately 3.7 miles of road will be opened to the public under the Open Road Management Alternative. The old jeep trail will be obliterated (2.4 miles) leaving 1.3 miles of road in the RMU to be obliterated or gated. The road following the overhead power line from the Lily Lake sewage treatment plant to the Bear River Ranger Station will be closed (0.8 miles). The road connecting this road to the Lily Lake Road will be closed (0.6 miles). There will be a zero net gain in road density for RMU 436.

Under the Open Road Management Alternative, recreational use would increase as would pressure on wildlife, however, seasonal closure of the road to the public during the fall would mitigate pressure on wildlife during the hunting season. Hunting on the Main Fork may change due to the road being closed to the public. Hunting in the Peninsula area will actually remain the same as far as the public is concerned. The seasonal closure will mitigate impacts caused by traffic during migration of elk. The greatest impacts will be on hunting in the Main Fork since there will be heavy equipment and drilling related traffic on the new road. We would expect pressures on wildlife to be no more or less than that being experienced on other Forest roads during the time it is open to the public.

If the well is a producer, 2 to 3 trucks would be used to haul oil to facilities near Evanston. Moving vehicles usually do not unduly disturb wildlife as long as the vehicles continue to move and not stop. Speeds will be slow enough (25 mph) to allow time to slow down or stop for wildlife on the road to escape into the surrounding forest.

With implementation of the Closed Road Management and Reclaimed Road Management Alternatives. There will be no increase in road density. Roads will be gated in the Closed Road Management Alternative

and will be obliterated in the Reclaimed Road Management Alternative. Hunting in the Peninsula area will remain the same as far as the public is concerned. Impacts to wildlife due to transportation of oil would be similar as discussed above.

Under all Road Management Alternatives big game would be expected to return to former level after construction and drilling operations have been completed. The Open Road Alternative would effect big game the most because of increased opportunity for harassment/or hunting, whereas implementation of the Closed Road Management and Reclaimed Road Management Alternatives would allow big game populations to return to former levels more readily.

Mitigation

General mitigation measures that relate to concerns for wildlife include:

- fencing the reserve pit to deter wildlife, particularly deer, from entering the pit
- flagging the reserve pit to discourage waterfowl and other wildlife species' access
- encouraging habitat regeneration through reseeding, distribution of stockpiled brush, and recontouring
- workers associated with this project would not be allowed to bring in firearms or pets
- vehicle speed limits would be strictly enforced
- seasonal road closures to public motorized access will be posted during the elk fall migration, and during the time the goshawk nest is being occupied.

General mitigation measures that relate to concerns for goshawks are discussed below.

As previously mentioned, there is the potential for goshawks using the nest in Section 5 (along the Peninsula Road) to be impacted by activities associated with the proposed action. Construction activities are not expected to begin until mid-July. The concern then, is for disturbance to nesting birds and young at the time of year they are expected to fledge from the nest. In addition to the timing restriction on road re-construction activities in the PFA, the following mitigation measures are recommended to minimize impacts (disturbance) to nesting goshawks:

- all heavy equipment hauled through the PFA (to be used in road construction outside the PFA) should be brought in during mid-day (10AM-3PM). This will minimize disturbance to nesting birds during peak feeding periods
- construction personnel would minimize traffic to the site by carpooling
- all vehicle speeds would be kept under 20 mph and no engine brakes would be used in the PFA
- vehicles would not be allowed to stop within the nest area, except for emergencies
- vegetation removed in road re-construction within the nest area should be kept to a minimum and within the existing road prism
- public use of the Pennisula Road should be restricted during years of active nesting at the nest in Section 5

These mitigation measures are included to further reduce any impacts of disturbance to nesting goshawks. These measures should be implemented in years of active nesting only. Active nesting will be determined by a qualified wildlife biologist monitoring the site during the month of June.

With the previously described mitigation measures implemented, this proposed action "may impact individuals, but is not likely to cause a trend toward federal listing or a loss of viability" of the goshawk population.

Cumulative Effects

There are no reasonably foreseeable activities beyond those addressed in this section except for the Main Fork Timber Sale (see Timber Section of this Chapter). If activities were to occur simultaneously or use in the area increases (public use for recreation or further development), the increased use of the area could result in increased pressure on wildlife. However, if other actions are planned to occur, further environmental review would address cumulative effects.

FISHERIES

Significance Criteria Impacts to fisheries would be considered significant if:

- project activities violate Forest standards for maintaining fish habitat at 90 percent of potential and 90 percent bank stability in affected streams (Main Fork)
- any pollutants contaminated area streams affecting the aquatic habitat

A temporary bridge would be installed during construction to cross the Main Fork. Once crossed, the bridge would be replaced with a bridge suitable for anticipated loads. No significant impacts to fisheries are anticipated.

Applicable Forest Plan Direction One of the Forest's goals is to improve the quantity and quality of lake and stream habitats through direct habitat improvement and increased coordination with other land uses.

Impacts Common to All Action Alternatives

The project involves reconstruction of a road in proximity to the Main Fork and a crossing of the Main Fork. A temporary bridge would be installed at the crossing to move vehicles and other equipment to the east side of the Main Fork. Once crossed, a permanent bridge would be constructed. Construction of the bridges may result in some sedimentation. The Main Fork, at the road crossing, is fairly high gradient and would tend to transport and dispense the sediment downstream - a small amount of sand would be deposited over a large reach. The amount of sedimentation would be determined by the specific construction techniques used and the care and skill of the equipment operators. Impacts would be minor and short term.

The project would require water for drilling, construction, and suppression of fugitive dust. Chevron would apply to the State Engineer's Office for a permit to withdraw some of the water needed for the project (dust suppression) from the Stillwater and some or all of the water for drilling and dust suppression from the Main Fork. The withdrawal of this water is not expected to impact the fisheries; the removal of water from the Main Fork would not exceed ten percent of total discharge at any time. No diversion structures would be placed in the stream.

The greatest potential for impact from project-related activities on the aquatic environment would be the unlikely event of a spill of pollutants in the stream. The chance of a spill would increase from transportating oil if production were in place. If a spill were to occur, significant damage could result for some distance downstream. In the case of the Main Fork, where the channel and flow rate are small, damage would be

extensive for a mile or more. In the case of the much larger Stillwater Fork, extensive damage would occur for a shorter distance downstream.

Effects of Each Alternative

No Action Under this alternative, the environment would remain as it exists with no well site or road constructed.

Alternative Well Sites A or B Impacts for either alternative would be as described above.

Road Management Alternatives The road has been designed to mitigate impacts on fisheries. Under the Open Road Management Alternative, increased pressure on the fisheries will occur as the area becomes more accessible, however, we do not anticipate the pressure to increase past that we are experiencing on other streams of similar characteristics. If use of the area (further development and/or public use for recreation) increases, the result could be increased impacts on the riparian vegetation adjacent to the streams.

Mitigation

Removal of water from the Main Fork will not exceed ten percent of total discharge at any time.

To satisfy Forest Service standards, the bridge that would be installed over the Main Fork would be set on treated timber or concrete sills. To minimize the need for rip rap and other channel-infringing activities, the sills would be set back at least five feet from the stream bank. Bridge elevation and bank protection would be the minimum necessary for a ten-year flood with no stream-flow constriction and would accommodate a 50-year flood. Chevron would use dips or roll grade to ensure that surface water is a distance of at least 50 feet from the road on each side of the bridge. The Forest Service would review the bridge site plan prior to submission for State and Federal permitting (Clean Water Act, Section 404).

During reconstruction of the road along the Main Fork, Soil and Water Conservation Practices contained in the Forest Service Handbook will be adhered to, which will minimize the amount of soil disturbance to avoid sedimentation in the nearby stream of the Main Fork.

In the unlikely event of a spill, emergency response plans are in place and Chevron's training would familiarize all project-related employees with the plans. A ditch with sediment traps will be placed around the well site which would help contain any sediment or potentially spilled materials that may affect the fish if it got into the stream. These precautions are taken to reduce the potential for a spill to reach the Stillwater or Main Fork to the extent possible.

Cumulative Effects

There are no reasonably foreseeable activities planned beyond those addressed in this section except for the Main Fork Timber Sale (see Timber Section of this Chapter). However, if other actions are planned in the future, further environmental review would address cumulative effects.

AIR QUALITY

Significance Criteria Any exceedance of ambient air quality standards, Federal or State, is considered a significant impact. Only a negligible amount of emissions of regulated pollutants are anticipated. Therefore, no significant impacts would occur.

Applicable Forest Plan Direction It is a Forest goal to manage resources and activities to protect air quality related values.

Impacts Common to All Action Alternatives

The primary air contaminants associated with routine oil and gas exploration include (1) fugitive dust from construction or traffic on unpaved roads, (2) diesel fumes from heavy equipment operations and the drilling rig, (3) combustion byproducts (emissions) from vehicles and equipment, and (4) venting or flaring of gas during well testing. Operation of the drilling rig and vehicles would result in release of nitrous oxides (NO_x). Volatile organic compounds (VOCs) would be released into the atmosphere during well testing, they would be flared as released so that they would no longer be volatile. These impacts would be short term, localized, and would be within acceptable limits established in Class II air sheds. These conclusions are supported in an EIS for full-field development on this same mountain range located further to the east (Hickey Mountain Oil and Gas Field Development Record of Decision and Final EIS. May 1987). The following is quoted from that document.

> "No impact beyond what is allowed within Class II areas, which allows for emissions from industrialization, is anticipated. The area has good natural wind dispersion, so no adverse impact to air quality from full field development is expected."

It is assumed that if no impact is anticipated from full-field development in the same general area, there would be no significant impact from a single exploratory well.

Class I areas would not be affected.

A slight deterioration in regional air quality could result from the flaring of natural gas that may be produced along with the oil. The natural gas is produced at high pressure and is burned using an igniter in a bermed flare pit located at a safe distance from the wellhead, resulting in some emissions from the atmosphere until such time as a pipeline for the gas can be constructed (if at all). Permits from the Utah Division of Oil, Gas, and Mining and the BLM are required in order to flare gas from an oil well.

Under worst case conditions, emissions of less than 25 tons per year of particulates can be expected from a single oil or gas well (USDI 1987).

The Posphoria and Weber Formations have the potential for containing Hydrogen Sulfide (H_2S) gas. Previously drilled wells in the general area that penetrated these formations did not indicate the presence of sour gas, but due to the complex geology some potential for encountering it still exists.

H_2S is a colorless gas with an odor similar to rotten eggs when present in low concentrations. However, when exposed to high concentrations, the sense of smell is rapidly paralyzed, followed by the respiratory system, and death can occur quickly with continued exposure. H_2S is heavier than air, tends to settle in low areas, and can build up over time if not dispersed by the wind.

Gas detectors and alarms in the mud return system would monitor the drilling mud as it comes out of the well bore and provide initial warning should traces of gas be encountered. The volume of drilling mud

being returned from the well bore will also be monitored since an increase in that volume may indicate a 'gas bubble' within the well bore. Should a gas flow be encountered, the blow-out preventors would be closed and the drilling mud diverted through the choke manifold system where the gas would be separated out and flared in the flare pit. The weight of the drilling mud (hydrostatic pressure) would then be increased to shut off the gas flow. If the gas contained H_2S, flaring it would generate sulfur dioxide (SO_2) which could affect air quality depending on the volume of gas and H_2S concentration.

If the well is productive and the produced fluids contain associated H_2S, the gas would be flared during production testing. Once the volume of gas is determined, the well would likely be choked back to a minimal production level or shut in until the gas could either be re-injected to maintain reservoir pressure or a pipeline installed to transport the gas to a gas plant.

The prevailing wind direction in the vicinity of the proposed well is from the southwest. Therefore, any released gases would likely be dispersed to the northeast. The Christmas meadows summer home area is approximately 1.25 miles to the northeast and would be a key consideration in the Public Protection Plan, should one be needed. Local wind direction would be affected by the ridge located between the proposed well site and Christmas Meadows, which would help deflect the dispersion pattern to the north of the Summer Home area. Also, since the well would be drilled during the fall and winter this area would have limited use by the homeowners during the drilling period.

Effects of Each Alternative

No Action Under this alternative the environment would remain as it exists with no well site or road constructed.

Alternative Well Sites A or B Impacts on air quality for either alternative would be as described above.

Road Management Alternatives Under the Open Road Management Alternative, increased use of the road during the summer months by recreationists would also contribute some dust to the air but in our opinion, not enough to exceed ambient air quality standards. Transportation of oil, if the well is successful, may require 2 to 3 trucks daily. This could result in dusty conditions if mitigation measures are not taken, however, this can be easily controlled by watering the road.

Mitigation

Fugitive dust would be suppressed to the extent possible using water sprayed from a truck. Emissions from vehicles and equipment would be minimized to the extent possible using emissions-suppressing devices as standard equipment on the vehicles and equipment. Flaring would be restricted to an acceptable level by the regulatory agencies.

Should H_2S be encountered during drilling, drilling would be suspended until a "Contingency/Public Protection Plan" was developed and approved in accordance with Onshore Order No. 6. This plan would include the identification of a secondary escape route for personnel on-site in case the primary escape route is downwind and unsafe. This secondary route would be a flagged foot path at a minimum. The plan would also provide for notification of local officials and notification and possible evacuation of anyone within the area potentially affected.

Cumulative Effects

There are no reasonably foreseeable activities planned beyond those addressed in this section except for the Main Fork Timber Sale (see Timber Section of this Chapter). If other actions are planned in the future, further environmental review would address cumulative effects.

WILDERNESS

Impacts Common to All Action Alternatives

The effects on the Hell Hole Basin portion of the High Uintas Wilderness will be very similar for all of the action alternatives. During construction and drilling the noise and additional vehicles will be distracting to those walking through the Main Fork to Hell Hole Lake. The noise may be heard from inside the Wilderness boundary (see section on Noise in this Chapter). The drilling rig and the lights from the drilling rig may be seen from A-1 and/or Kletting Peaks along with the Mirror Lake Highway. This would be considered distracting and disruptive to some visitors. The noise and sight of the drilling rig would be short term (about one year) and then the drill rig would be gone. The effects on the users would be expected to be more severe on the trail leading to the Wilderness than within the Wilderness. In the most extreme case, the 42 visits to the Wilderness in the Hell Hole Basin may be redirected to some of the other 458,655 acres of Wilderness during the period of construction and drilling.

Effects of Each Alternative

No Action Alternative Under the No Action alternative there would be no change from the existing situation at this time, however since the well would only be denied for this location at this time, it would not necessarily eliminate effects in the future.

Action Alternatives Effects of the action alternatives are as discussed under Impacts Common to All Action Alternatives.

Effects of the Road Management Alternatives

The Open Road Management Alternative will probably cause an increase in the amount of use in the Wilderness near Hell Hole Lake after construction and drilling are completed. The reason for this expected increase in use is because of the easier access and proposed new trailhead within 3 miles of the Wilderness. It can only be speculated as to whether this increase will come from existing Wilderness users or if they will be new Wilderness users. This additional use could be viewed by some users as degrading the solitude which exists today. There are some who would welcome the easier access while other would prefer the rugged access which exists today.

The Closed Road Management Alternative and the Reclaim and/or Rehabilitate Road Management alternative would not be expected to attract the increase of users that the Open Road Management Alternative would (after construction and drilling operations). Some users would be disturbed at the use on the road while the were walking on the trail within the Main Fork drainage because of the close proximity. Distance and vegetation would help mask the disturbances as users proceed deeper into the Wilderness.

ROADLESS CHARACTER

Significance Criteria Impacts to roadless character were considered significant if:

- the activities within the roadless area did not conform to the Forest Plan goals, objective and standards and guidelines

Application of Forest Plan Direction Management Area direction encourages management of the recreation opportunity spectrum (ROS) categories of "roaded natural appearing" (RNA) as mapped in the Forest Plan (page IV-76). The Forest Plan designated ROS class would not change.

Impacts Common to All Action Alternatives

The construction and maintenance of roads have an irreversible and irretrievable effect in a roadless area. These activities result in disturbance to ground and vegetation that directly and indirectly affects the physical, biological, and social characteristics of the area.

The roadless character is related to the presence or absence of roads and human manipulation in the area. The quality of a roadless area is also affected by the size of the area and its proximity to other roadless or wilderness areas.

The environmental consequences of the proposed project within the roadless area were evaluated for each of the alternatives. The number of acres of roadless area affected and the effects of construction activities on the roadless characteristics were analyzed. The characteristics include: natural integrity, apparent naturalness, remoteness, solitude, special features, and manageability/boundaries and were defined in Chapter 3.

We are aware of the dispute concerning how impacts to the roadless resource should be quantified. The following figures are based on the 1983 re-evaluation conducted during development of the Forest Plan along side of calculations made during this analysis for lands that in our opinion also contain roadless characteristics. In any of the action alternatives, an additional 400 acres (approximate) of lands having roadless characteristics would be altered if the RARE II map was used. The percentage of total roadless lands which may at some point in the future be considered for wilderness designation probably would not differ that much since the total area inventoried as roadless is also larger.

Effects of Each Alternative

No Action Under this alternative, the environment would remain as it exists with no well site or road construction. The roadless character would be unchanged from existing conditions.

Alternative Well Site A Under this alternative, approximately seven acres of the roadless area (1983 re-evaluation) or 13.3 acres of land having roadless characteristics would be directly impacted by road and well pad construction. Depending on one's perception and values, indirect impacts would effect approximately 730 acres (1983 re-evaluation) or 1095 acres of lands with roadless characteristics. This is approximately 34% of the inventoried roadless area (1983 re-evaluation) or 41% of all lands with roadless characteristics in the Main Fork drainage. Acres remaining in the High Uintas Roadless Area would be approximately 64,770 acres (1% decrease).

Natural integrity - Human-induced change to the area would directly be related to the reconstruction and construction of the access road and drill pad. Indirect impacts from the traffic and drilling activities would

extend beyond the confines of the road and drill pad depending on the tolerance of those in the area. Natural Integrity would obviously be diminished within the road and drill pad profiles and out into the surrounding area depending on the screening effects of vegetation and topography, and on the level of activity associated with the proposed action. During the height of the activity, we would probably expect the impacts to extend to the ridge tops defining the Main Fork drainage. Natural Integrity beyond the ridge tops either between the Main Fork drainage and the Stillwater Fork, including the flat ridge top, or between the Main Fork drainage and the Hayden Fork would remain unchanged.

Apparent naturalness – Of course the direct impacts from road and drill pad construction will not appear natural, however, the location of the pad and the road lie within continuous stands of trees which will visually screen the impacts. Aside from the actual road and pad lying in the bottom of the Main Fork drainage, the rest of the area will appear natural.

Remoteness – The sense of remoteness will be totally diminished along the access road and drill pad from the direct impact of clearing, and construction. Indirectly, noise from the drilling activity will extend beyond the road and pad to the two ridge tops defining the upper most sides of the Main Fork drainage. Once the ridge tops are crossed, the sense of remoteness will return until you get closer to either the Stillwater Road or Highway U–150. The sense of remoteness will increase as you proceed further up into the Main Fork towards the Wilderness.

Solitude – Isolation from sights, sounds, presence of others, and development will not be possible within the road or pad locations and opportunities for solitude will be diminished within the confines of the Main Fork drainage in the vicinity of the access road and drill pad. One should find solitude undiminished outside either side of the Main Fork drainage, however, it will diminish as distances decrease as you near the Stillwater Road or Highway U–150. Solitude will also increase as one travels further up into the Main Fork drainage above the project.

Special features – The remnants associated with the Howe Flume Historic District are special features within and surrounding the project area. Mitigation measures and the design of the project will ensure protection of these remnants and no direct adverse effects are expected.

Other "special" features are more difficult to define. To many of the visitors to this area, the place is special because of those same characteristics which have been described above. The "level" of natural integrity, apparent naturalness, remoteness, and solitude is high and will be impacted within the confines of the Main Fork drainage. Those areas to the sides and outside of the confines of the Main Fork drainage will still provide some of the "special features" many people seek, however, those special features found only in the bottom of the Main Fork drainage, such as those associated with the stream itself, will not be found. The enjoyment of an area's "special" features is highly subjective and personal.

Manageability/boundaries – The proposed project will create a "cherry stem" of activity jutting into this "roadless" area in the bottom of the Main Fork drainage (access road and drill pad) and will effect approximately 1000 acres of lands with roadless characteristics. This will have the effect of creating two fingers on either side of the cherry stem which will still have roadless characteristics. Each "finger" would still be approximately one mile wide and would be attached to the Wilderness and would still meet the size criteria for wilderness consideration. The boundaries of these fingers would not follow any natural features which would make administration difficult.

The Road Management Alternatives will have specific effects also. These are also described in this section.

Alternative Well Site B Under this alternative, approximately 13 acres of the roadless area (1983 re–evaluation) or 19 acres of land having roadless character would be directly impacted by road and well

pad construction. Depending on one's perception and values, direct and indirect impacts would effect approximately 1040 acres (1983 Re-evaluation) or 1405 acres of lands with roadless character. This is approximatley 50% of the inventoried roadless area (1983 Re-evaluation) or 53% of the all lands with roadless character in the Main Fork drainage. Acres remaining in the High Uintas Roadless Area on the North Slope would be approximately 64,220 acres (2% decrease).

Natural integrity - Human-induced change to the area from implementation of this alternative would be similar to that described for Alternative Well Site A except for the extent of the impacts. Changes would also occur upon the flattened ridge top separating the Main Fork from the Stillwater Fork. This ridge top is approximately 3/4 mile wide and has a fairly continuous cover of mature lodgepole and spruce. Alternative drill site B is located approximately in the center of this ridge top.

The area west of the Main Fork drainage would remain unchanged.

Please refer to the direct and indirect impacts discussion in the preceding paragraph. Both direct and indirect human-induced changes to the area would be increased with this alternative.

Apparent naturalness - As with Alternative Well Site A, the direct impacts from road and drill pad construction will not appear natural, however, the location of the pad and the road lie within continuous stands of trees which will visually screen the impacts. Aside from the actual road and pad, the rest of the surrounding area will appear natural. This alternative, however, has an additional 1.6 miles of road and locates the drill pad on the flattened ridge top east of the Main Fork drainage. Direct and indirect impacts (discussed above) to the apparent naturalness all increase to include this ridge top. The area west of the Main Fork will remain unchanged.

Remoteness - The sense of remoteness will be diminished obviously along the access road and drill pad from the direct impact of clearing, and construction (please refer to preceding discussion). Indirectly, noise from the drilling activity will extend beyond the road and pad throughout the drainage bottom and across the flat ridge top where the drill pad would be located. The sense of remoteness would only be attained by traveling further up into the drainage away from the activity. Some degree of remoteness could probably be attained by crossing the ridge line making up the west side of the Main Fork drainage but this would diminish as the distance decreases as you travel towards Highway U-150.

Solitude - Isolation from sights, sounds, presence of others, and development will not be possible within the road or pad locations and opportunities for solitude will be diminished within the confines of the Main Fork drainage as well as on top of the east ridge top (between the Main Fork and Stillwater Fork), in the vicinity of the access road and drill pad. Solitude would only once again return once some distance has been gained by going further to the south up the Main Fork drainage and by crossing the ridge making up the west side of the drainage..

Special features - The remnants associated with the Howe Flume Historic District are special features within and surrounding the project area. Mitigation measures and the design of the project will ensure protection of these remnants and no direct adverse effects are expected.

Other "special" features are more difficult to define. To many of the visitors to this area, the place is special because of those same characteristics which have been described above. The "level" of natural integrity, apparent naturalness, remoteness, and solitude is high and will be impacted within the confines of the Main Fork drainage as well as on top of the flattened ridge top lying between the Main Fork and Stillwater Fork. Those areas to the west side, outside of the confines of the Main Fork drainage, will still provide some of the "special features" many people seek, however, part of the special features is the Main Fork stream and this will be effected by the road. The enjoyment of an area's "special" features is highly subjective and personal.

Manageability/boundaries - During the drilling operation, that area outside of the drainage to the west is still attached to the High Uintas Wilderness and at this point would still meet the criteria for wilderness consideration. However, the area between the access road and drill pad and Christmas Meadows Summer Home area remaining in roadless character would be narrowed to the point where wilderness criteria would not be met. This could effectively remove the roadless character from an additional 500+ acres above the 1405 acres effected already discussed. This would equate to a total of 1900 acres or 72% of the lands within the Main Fork drainage having roadless characteristics (3% decrease in High Uintas Roadless Area).

The Road Management Alternatives will have specific effects also. These are also described in this section.

Road Management Alternatives Open Road Management Alternative For Alternative Well Site A, impacts to the roadless character, as described by the six criteria, would not be significantly different than that already described under Alternative Well Site A. During construction and drilling, public traffic will not be allowed, however, once drilling has been completed, the public will be allowed to use the road during the summer months up to the trailhead near the Main Fork bridge. If the well is unsuccessful, the road on the east side of the stream, from this bridge to the pad and including the pad, will be reclaimed. Since the pad is only 1/4 mile from the bridge location, we would not expect much of a decrease in impacts to the six roadless characteristics already described for site A. These impacts would remain as long as this road is kept open to the public.

For Alternative Well Site B, impacts to the roadless character, as described by the six criteria, would not be altered due to this road management alternative during construction and drilling. Once drilling is completed and if the well is successful, the road and pad would remain as constructed, however, the public would still be stopped at the trailhead near the Main Fork bridge. If the well is unsuccessful, the pad and road on the east side of the Main Fork Stream would be reclaimed and those impacts described under Alternative Well Site A would apply. The roadless characteristics for the ridge top, where well site B was located, would return to pre-project condition, however it may take as long as 80 to 100 years to fully return to the drill site and road location.

There would be an increase in recreational use due to improved accessibility which will displace those seeking areas away from vehicles, however, for good or bad, it will provide easier access to the Wilderness.

Closed Road Management Alternative Under this alternative, impacts to the roadless character would not significantly alter the descriptions already presented for the alternative well sites above. The principal difference would be less traffic after construction and drilling are completed since the public would not be allowed to drive this road.

If the well is unsuccessful, hikers on the road would not see vehicles, except for occasional administrative purposes, however, their experience would depend on their attitude of walking along or across a fairly high standard road. Using the six roadless character criteria, direct impacts (described above for each well site alternative) would remain constant while indirect impacts may be reduced since the sounds of the activity association with the project would have stopped.

Reclaimed-or Rehabilitated Road Management Alternative The only time this alternative could be used is if the well is dry (unsuccessful). The area would revert to pre-project conditions (refer to Chapter 3) quite quickly once all activities have been finished, however, from directly within the corridor where the road and pad had been located, those criteria dealing with appearance will take longer to achieve. Depending on one's tolerance and perception, it could take trees 80 to 100 years to reach the size that will blend totally into the surrounding stands and again appear totally natural.

Cumulative Effects

There are no reasonably foreseeable activities planned beyond those addressed in this section except for the Main Fork Timber Sale (see Timber Section of this Chapter). However, if other actions area planned in the future, further environmental review would address cumulative effects.

WILD AND SCENIC RIVERS

This analysis will determine whether the Table Top well and access will affect the eligibility of the Stillwater Fork which has been identified as eligible. This requires determining if:

- the "free-flowing" characteristics of the river are modified;
- the potential outstandingly remarkable values for the river area are modified; and
- the potential classification of the stream has changed.

Impacts Common to All Action Alternatives

The effects of the project on river characteristics which affect its free-flowing nature, potential outstandingly remarkable values and potential classification are described below:

Road Upgrade and Construction - Restoration of .8 miles of the Stillwater Road would not affect Stillwater Fork because the road is not within the 1/4 mile river corridor.

The reconstruction work planned for the Peninsula Road that is within the Stillwater River corridor is very limited. There is an existing bridge on the Peninsula Road that crosses the Stillwater. No improvements are being made to this bridge. The effects of the Peninsula road reconstruction would not encroach into channels and existing river and creek hydraulics would not be affected. Therefore, the existing river and stream characteristics pertaining to free-flowing character would not be altered from the present status.

The Stillwater Fork was determined to be eligible because of its outstandingly remarkable value for scenery. Because of the limited degree of road reconstruction within the Stillwater river corridor, there will be no or minor effects from the action alternatives on these values. About two-thirds of a mile of the Peninsula Road is within the river corridor (defined as a quarter mile from each bank) while the Peninsula Road actually parallels the river for less than a quarter mile. No additional river crossings will be built nor will additional stretches of the Stillwater Fork be followed. The FEIS recognizes that 4 feet on each side of the existing roadway will be disturbed by cuts and fills and widening. However the river will still be screened from the road. Widening portions of the existing Peninsula Road would result in a weak to moderate visual contrast but mitigation is expected to minimize contrasts and result in low to moderate visual impacts. Consequently, no impairment to the outstandingly remarkable scenic value will occur.

Neither well site is within the river corridor or visible from the river corridor.

This portion of the Stillwater has been classified as scenic which is defined as largely undeveloped but accessible in some places by roads. Because the Peninsula road is already in place and reconstruction work is limited, effects are minor and its classification would not change.

Based on the above findings, the effects associated with this project will not affect the eligibility or classification potentials of the Stillwater Fork, therefore, the opportunity for designating it as a scenic river in the future is not foreclosed by allowing the road reconstruction described in the FEIS.

Effects of Each Alternative

No Action Under this alternative, the environment within the river coridors would remain as it exists with no well site or road construction. The free flowing character would be unchanged from existing conditions.

Action Alternatives Effects are as discussed under Impacts Common to All Action Alternatives.

LAND USE

Significance Criteria Impacts to land uses were considered significant if:

- land use that does not conform to those allowed in the Forest Plan
- compared to existing conditions, there is a deterioration (about one year) of Forest road surfaces open to the public
- the proposed action results in interference with existing developed recreation sites for more than one season of recreational use
- the amount of forage lost reduces stocking rates by ten percent or more animal unit months (AUMs) in each affected pasture
- project activities prevent livestock access to water for a period of more than one day
- grazing patterns are disrupted for periods of more than two weeks

The exploratory oil well would conform with the Forest Plan and would not preclude other land uses. No impacts on transportation are anticipated to be significant. No significant impacts to rangeland are anticipated.

Application of Forest Plan Direction Management Area direction requires the evaluation of existing roads and determination of the appropriate road density for public use and resource protection (Forest Plan, page IV-97). Also, Management Area direction encourages management of the recreation opportunity spectrum (ROS) categories of "roaded natural appearing" (RNA) as mapped in the Forest Plan (page IV-76).

Impacts Common to All Action Alternatives

Transportation Implementation of either alternative would provide access into an otherwise unroaded area. Traffic volumes would increase on those existing roads that provide access to the proposed project area. The additional heavy-truck traffic on the road to the site would result in some damage to the road surface. The condition of the roads would be documented by the Forest Service within a week prior to commencement and upon completion of the project activities to identify if damage occurred to the road. The increased commercial traffic and the large trucks on the first mile of the Stillwater Road could create a safety hazard to the general public in the area.

Recreation An increase in heavy-truck traffic during the proposed drilling could detract from the recreation experience and create safety problems. Increased traffic on Highway 150 would not pose a safety problem during the summer months because the design standards of the road accommodate such traffic. If this becomes a winter drilling operation, the access to the well site would have to be cleared of snow. This could cause a major conflict with the snowmobile users on Highway 150. Also, it could cause reduced snowmobile traffic to the Bear River Service Station. If the well is productive this potential conflict could be long term.

The increased heavy-truck traffic on the Stillwater Road could cause safety problems and may somewhat reduce the recreation experience for that .8-mile segment of road. The reduced recreation experience would be short term and of a temporary nature, when the drilling is complete the conflict would be removed if the well is not productive. If the well is productive oil transport trucks would continue to impact the recreation experience.

Hunters would be affected by the noise and traffic during project activities. However, since the road would be kept closed to all except authorized users the access by hunters would not change. The hunters would have to enter the area by foot or horse. The hunting season experience would be impacted by the oil transport trucks twice a day if the well is productive.

Noise from the drilling operations or production would not have any direct impact on the recreation users in the Stillwater drainage or the Hayden Fork drainage. A few recreation users (most likely hikers) of the 4WD/pack trail would be impacted by the noise of the construction, drilling operation, and production equipment. The 4WD trail would be reclaimed for its entire length (2.4 miles). The impact to the 4WD experience on this segment would be long term.

The entire length of the road from the Stillwater Road to the well pad would temporarily reduce the experience level from SPNM and SPM to RNA. This would be a greater short-term impact during the construction and drilling operations. This impact would be long term if the well is productive, but to a lesser degree than during exploration drilling. After this time, the construction and drilling activities would cease and a quieter atmosphere would be returned. People seeking a wilderness experience in this area will be frustrated in their search until all resource development activities cease and vegetation has been reestablished. For vegetation to reach the same level as now exists, it could take trees as long as 80 to 100 years to reach the size of those that now occupy the area.

Effects considered in comparing alternatives were generally changes to the physical setting. The physical setting affects the type of recreation experience the Forest visitor is likely to have. Alternative Well Site A is located in an area having Semiprimitive Motorized (SPM) characteristics. It is, however, located in an area designated as Roaded Natural Appearing (RNA) in the Forest Plan (IV-30). The well site in Section 21 is located in an area having Semiprimitive Nonmotorized (SPNM) characteristics, however, it is also located in the RNA designated area. The management of the road in an open or closed situation would determine how the general public would be able to access the area.

Range The impacts on grazing livestock are expected to be insignificant and would not affect the number of animal unit months (AUM) that the allotment can support even though there may be some loss of vegetation. There are no known range-associated improvements in the vicinity of the road and well pad. There would be no effect to prime farmland. The spread of noxious weeds could create conflicts with forage production.

Effects of Each Alternative

No Action Under this alternative, the environment would remain as it exists with no well site or road constructed.

Alternative Well Site A Under this alternative recreation users would be directly and indirectly impacted as described under effects common to all alternatives by road work and well pad construction activities. There would be one well pad and about .8 mile of new road constructed. There would be a decrease in solitude during construction and drilling activities as a result of the change to existing conditions. Hikers would perceive a reduction in the apparent naturalness and natural integrity of the adjacent area. However,

these changes would be apparent only within the immediate vicinity of the well pad and access road. Except for the immediate area, the remaining area would remain unaffected. Short-term impacts to the existing users could be considered significant by some.

Alternative Well Site B Under this alternative existing recreation users would be directly and indirectly impacted by the road and well pad construction. The one well site and approximately 7.3 total miles of road construction, reconstruction, and betterment would cause a change on the values of the current users.

Road Management Alternatives Under the Open Road Management Alternative the existing (not designated) ROS condition class of SPNM and SPM would change to RNA for the long term, which is what would happen during construction and drilling. This would meet Forest Plan management direction which designates the area as RNA. The users who are expecting to find a 4WD road and the experience level associated with that would not find it. There would be less solitude than currently exists within the area. The values and experience found there today would be changed. There would be an increase in recreational use due to improved accessibility which will displace those seeking areas away from vehicles, however, for good or bad, it will provide faster access to the Wilderness.

Under the Closed Road Management Alternative the effects would be very similar to the Open Road Management Alternative. The principal difference would be less traffic after construction and drilling are completed. The reduced traffic would be a result of the exclusion of the General Public, however, potential oil production could resuit in 2 to 3 trucks traveling the road daily. Access to the Wilderness by the public would be by non motorized methods either along the newly constructed road or cross country. If the well is successful, anybody hiking up the road would have to share it with vehicles associated with the well until the bridge on the Main Fork is reached. If the well is unsuccessful, hikers on the road would not see vehicles, except for occasional administrative purposes, however, their experience would depend on their attitude of walking along a fairly high standard gravel road. Under the Open Road Management Alternative, the opportunities for dispersed "car" camping will increase since the improved road will provide access for a greater variety of vehicles.

With implementation of the Reclaimed-or Rehabilitated Road Management Alternative the area would revert to the solitude and quietness that exists today. The road would be revegetated and eventually reproduction of trees would occur.

The effects on the Range program would be as described under Impacts Common to All Action Alternatives.

Mitigation

The potential safety hazard would be minimized by improving the road to Forest Service standards, enforcing reduced vehicle speed, and installing signs to warn of the large vehicles and increased vehicular traffic. Dust abatement measures also would ensure better visibility and reduce safety hazards.

The conflict between a winter drilling and production operations and snowmobile use on Highway 150 could be mitigated by maintaining the existing gate on the Forest boundary. Travel beyond this gate would be restricted to authorized vehicles only. Only half of the highway would be plowed for this traffic while maintaining the other half for snowmobile use. During weekends, traffic to the drill site would be scheduled for times of the day used least by the snowmobilers. Emergency traffic would proceed with the pilot vehicle equipped with flashing warning lights. Snowmobiles would not be allowed beyond the existing gate at Peninsula Road, which is now closed year-round.

Cumulative Effects

There are no reasonably foreseeable activities planned beyond those addressed in this section except for the Main Fork Timber Sale (see Timber Section of this Chapter). However, if other actions area planned in the future, further environmental review would address cumulative effects.

FIRE MANAGEMENT

Significance Criteria Impacts would be considered significant if:

- a fire exceeds 100 acres in size

Application of Forest Plan Direction A goal of the Forest is to provide for an active, cost effective prevention program that is directed toward specific areas and causes.

Impacts Common to All Action Alternatives

The slash created by this project would be piled in pits in Forest-designated locations, burned, and buried, and would not increase the hazard of fire. More of a hazard is due to equipment usage and increased human use of an area. In the event of a fire, the operator would be responsible for the costs of fire suppression.

Effects of Each Alternative

No Action Under this alternative, the environment would remain as it exists with no well site or road constructed.

Alternative Well Sites A or B Impacts would be the same regardless of the alternative.

Road Management Alternatives Under the Open Road Management Alternative, the public would be allowed to utilize the road through the summer months up to the new crossing on the Main Fork. Increased access would increase the possibility for wildfire in the area. Potential for wildfires would be greater for this alternative as related to the Closed Road Management Alternative. Public education and patrols would help mitigate the possibility of wildfire as a result of increased public access.

Mitigation

Prior to construction, Chevron employees, contractors, and subcontractors would be familiarized with the hazards causing wild fires, precautions to avoid fires, and fire-fighting techniques. Fire-fighting tools would be located in a readily accessible location known to all workers and consist of one trailer mounted 500 gallon tank with pump and hose, five pulaskis, five shovels, and five five gallon backpack pumps. Slash would be burned only as authorized by the Forest Service. No burning of trash would be allowed.

Cumulative Effects

There are no reasonably foreseeable activities planned beyond those addressed in this section except for the Main Fork Timber Sale (see Timber Section of this Chapter). If other actions are planned in the future, further environmental review would address cumulative effects.

TIMBER

Implementation of the proposed project would result in a few adverse impacts to timber resources. A maximum of 200,000 board feet of lodgepole pine would be removed. All commercial timber removed would be cut in accordance with current Forest Service standards and the volume of timber removed would be determined by the Forest Service in advance of cutting. Chevron would purchase from the Forest Service all commercial timber at current appraised rates. The timber cut during construction would be removed from the Forest by Chevron.

Significance Criteria No significance criteria were developed for this resources because impacts were anticipated to be insignificant.

Application of Forest Plan Direction One of the Forest's goals is to use insect-killed trees, forest debris, slash, and unmerchantable green softwoods through an aggressive firewood program.

Impacts Common to All Action Alternatives

At present, there are no plans, except for the Main Fork Timber Sale, to harvest in the area of the project in the reasonably foreseeable future. However, the mature stands of timber along the new road would be more accessible and economical to harvest in the future. The post- and pole-size stands that are in need of treatment would be more economically feasible to treat. If the exploratory oil well is dry, the access road on the east side of the Main Fork would be recontoured to a natural appearance and seeded. This would allow future use of the road for management of the area, but would reduce potential for erosion and deter unauthorized use. A long-term impact would result because the road would be left in place and not returned to the timber base. Even though some acres would be removed from timber production, new access into the area would provide the opportunity to treat those stands needing treatment resulting in increased production.

Effects of Each Alternative

No Action Under this alternative, the environment would remain as it exists with no well site or road constructed.

Alternative Well Site A As stated elsewhere in this document, approximately 16.91 acres of lodgepole pine would be removed from the timber base to accommodate the new road and well pad.

Alternative Well Site B Approximately 23.76 acres of lodgepole pine would be removed from the timber base to accommodate the new road and well pad.

Road Management Alternatives The affects of the road management alternatives would be as described above except for the Reclaimed-or Rehabilitated Road Management Alternative which would restore the land to the timber base. The Open Road or Closed Road Management Alternatives would allow easier access to implement forest management practices.

Mitigation

During the preparation of the Forest Plan, loss of suitable timber base to construction of roads was considered in determining the annual timber harvest levels. Therefore site specific mitigation measures to offset loss of suitable timber base are not necessary.

Main Fork Timber Sale Cumulative Effects

Page IV-374 in the Forest Plan estimates three miles of new road construction would be needed for access for the timber sale and that the sale would cover approximately 385 total acres. Under current standards and guidelines, we would expect the sale to be made up of several cutting units of varying sizes. If clearcutting were the optimal harvest method chosen, none would exceed the 40 acre standard for clearcuts. Larger cutting units of shelterwood harvest could be expected.

If and when this timber sale is actually proposed, an analysis would be conducted and the potential impacts disclosed following NEPA requirements. Mitigation measures, construction design criteria, timber harvesting methods, and monitoring plans would be prescribed to address the impacts.

Without proper mitigation measures, soil movement and water contamination from sedimentation could be significant considering the amount of acreage involved. Road construction criteria, Best Management Practices (FSH 2509.22, Soil and Water Conservation Handbook) and timber harvesting methods exist which have been proven to mitigate erosion to acceptable levels in most cases.

Impacts to wildlife could occur from reduction in suitable habitat during road construction or timber cutting. During the life of the sale (possibly three years), there would be displacement of wildlife intolerant to the activities associated with timber sales (noise, humans, heavy equipment, etc.). There is the potential, however, to improve habitat for wildlife preferring openings. Impacts due to noise and human activity would only be temporary.

We would only anticipate negligible cumulative impacts to the fisheries from the timber sale. Since the reason the timber sale is being discussed is the possibility of using the same access road as the drilling project, impacts would be related to increased traffic due to timbering activities. The road has already been designed to mitigate impacts to the fisheries.

It is not likely that air quality would be adversely affected beyond the dust created by logging vehicle traffic.

As predicted on page IV-374 of the Forest Plan, the timber sale would cover approximately 385 acres most of which would be in inventoried unroaded area. People seeking a wilderness experience in this area will be frustrated in their search until all resource development activities ceased and vegetation has been reestablished. To reach the same level as now exists, it could take trees 80 to 120 years to reach the size of those that now occupy the area.

The Main Fork Timber Sale would increase the potential for wildfires. Proper mitigation measures would reduce the risk to tolerable levels.

Of course at this time we don't know if the Main Fork Timber Sale would be sold nor do we know to whom. There are timber companies already established in the local communities who would no doubt be interested in the sale. There would not be an influx of new workers if they were successful in buying the sale. If a company from outside the area happened to be the successful buyer, there would be an influx of new workers but not a significant number to affect the infrastructures of the local communities.

Visual impacts could result from the timber sale depending on road location and the location and shape of the sale units in relation to Highway U-150. Proper location of roads and sale units would mitigate impacts to the visual resource. Distance and topography allow for opportunities to screen impacts and to make changes in the landscape seem more natural to travelers on the highway and still meet the visual objectives prescribed in the Forest Plan.

Noise associated with the drilling project would be short term occurring primarily in association with activities of construction, drilling, and preparation for production. If another activity were to occur at the same time as the proposed drilling project, there could be a cumulative increase in noise. However, at this time the timber sale is scheduled to occur in 2000 and would not occur simultaneoulsy with the proposed action. Activities associated with the timber sale would occur through a three year period.

Location of cutting units associated with the timber sale could impact cultural resources if proper precautions are not taken. We anticipate that the cutting units would be outside of the historic district. A cultural resource survey would be conducted during analysis of the timber sale with the objective of locating other cultural resources which may be impacted if not protected in the sale contract. We would anticipate impacts to cultural resources to be negligible.

SOCIOECONOMICS

Significance Criteria Impacts were considered significant if:

- increased demand for housing resulting from project activities exceeds supply
- short-term or long-term increases in demand for local government facilities or services exceed existing capacity
- there is change of ten percent or more in County government revenues or in County-wide employment

Based on these criteria, the activities associated with drilling and production of this single exploratory oil well would not result in significant impacts on socioeconomic resources.

Application of Forest Plan Direction There are no Forest-wide standards and guidelines identified in the Forest Plan.

Impacts Common to All Action Alternatives

The proposed project would be expected to have several minor effects upon the socioeconomic environment for the project area communities and counties. These effects are discussed as they relate to both short- and long-term impacts. The analysis addresses economic, fiscal, and social effects in the event that the proposed project is undertaken. In comparison to other mining ventures that have historically occurred within the area, the proposed venture would be of major significance only in the event of large volume production in conjunction with other wells. Nevertheless, this exploratory drilling, in and of itself, would generate a positive economic effect upon the aforementioned cities and counties through increases in retail and service-related trade.

Economic Effects

The proposed schedule for the project entails several different phases: 1) approximately 45 days for new road construction, construction of the well pad and surrounds, and assemblage of the drilling apparatus; 2) drilling operations are expected to occur within 150 to 200 days, operating 24 hours per day; 3) in the

event the well is nonproductive and capped, the site will be reclaimed per Forest Service approval during the autumn following drilling, or 4) if the well produces, facilities for removal of gas and/or oil would be developed by Chevron under procedural guidelines for operation and maintenance of such facilities established between the former and the Forest Service and BLM – commonly, this would require about 14 days for completing the mineral extraction apparatus and an additional ten or so days for building a battery of tanks (Chevron 1991). Overall, duration of the project could be expected to exceed ten months if successful. While a 15-person crew would be employed for the drilling operations (one, a permanent employee of Chevron), additional contractual help would be engaged for earthwork associated with road construction, site development, and restoration, as well as for drayage, and additional requirements drawing upon local contractors and vendors, thereby contributing to the local economy through the input of additional wages and the procurement of goods and services. While as many local workers would be employed as possible, transient hires would require goods and services within Evanston and/or the other municipalities representing an infusion of new, albeit short-term, disposable income.

Fiscal Effects

Most sales generated by direct project requirements during the construction phase of the undertaking would be taxable retail sales contributing to State and local sales tax revenues. Likewise, in the event of production, sales tax generated expenditures associated with yearly operational and maintenance costs would benefit the above entities over the long term. Federal and Summit County revenues would be enhanced by oil and gas royalties. In addition, if production were to commence, the State of Utah would levy a variable oil and gas severance tax, amounting to three to four percent of the value of each barrel of oil produced. The oil and gas severance tax goes into the State General Fund and then is redistributed among the state's counties.

Social Effects

According to the Summit and Uinta County Planning Departments, the proposed project by itself would have little impact upon local or county services. Since the drilling project is short-term and crew numbers limited, contact within the region would be limited. As such, public services within the communities and counties would be able to absorb the project under standard operating parameters. Most, if not all, of the immigrant employees hired for the drilling activities would disperse with the completion of the project.

Effects of Each Alternative

No Action Under this alternative, the environment would remain as it exists with no well site or road constructed. Those who treasure this area for the unique values that are associated with the undeveloped naturalness will not be affected by this alternative. The values of uniqueness, solitude, and natural integrity will remain.

For the segment of the public with a priority to consumptive activities the No-Action alternative will not meet any of the values they prefer, such as providing economic benefits from increased employment, business activity, and revenues it would bring to the counties and communities.

For the segment of the public with a priority to environmental protection and preservation the No-Action alternative will maintain the unique, and ideal location for wildlife and recreational pursuits values they believe the project area contains. These people believe that oil and gas should be extracted elsewhere where environmental costs are less. This alternative would meet these values and provide the most benefits to them.

The third segment of the public with a priority to recreation and restricted traditional uses, and favoring a combination of uses for the project area, while avoiding field development would not be impacted by this alternative. However those who would favor expansion of opportunities for motorized recreation would not be provided that opportunity.

Alternative Well Sites A or B Impacts would be the same regardless of alternative. Those individuals and groups whose values are associated with naturalness, solitude and the undeveloped nature of the project area will be affected. There will be a loss of those values within the immediate vicinity of the road and well pad. The noise levels will carry some distance (see section on Noise in this Chapter). Effects on the roadless resource are discussed in the section on Roadless Areas. The roadless character will be changed, thus affecting those who treasure the values associated with roadless areas.

For the segment of the public with a priority to consumptive activities either of these alternatives will provide the benefits they desire. Those who would favor development proceeding with little harm to the physical and biological environment would find the mitigation measures providing protection adequate. Either of these alternatives would provide more benefits to this segment of the public than the No-Action Alternative.

The segment of the public with a priority for environmental protection and preservation would be severely impacted by implementation of either well site alternative. These publics would view either well site alternative as destroying on of the last remaining natural areas that is both spectacular and relatively unspoiled. The environmental costs of either well site location would be viewed as to great, and in their view oil and gas and timber should be extracted elsewhere. These publics would view the implementation of either well site as having significant impacts on Wilderness potential or Semiprimitive Nonmotorized recreation opportunities.

For the segment of the public with a priority to recreation and restricted traditional uses either will site location would provide additional opportunities for motorized recreation. Some will think that the mitigation provided for will adequately protect the environment while other will not. If the well were drilled and found unproductive the opportunities provided with the open road alternative would be a benefit. However if the well produced commercial quantities of hydrocarbons, the oil transport trucks would detract from their experience.

Mitigation

No mitigation is necessary.

Cumulative Effects

There are no reasonably foreseeable activities planned beyond those addressed in this section except for the Main Fork Timber Sale (see Timber Section of this Chapter). Beneficially, there would be increased revenue from oil and gas revenues and purchase of goods and services. A large influx of workers (and possibly their families) from outside of the local communities is not expected since most of the services needed to support this project are already in the local communities. Further environmental review required of future projects would address cumulative effects.

VISUAL CHARACTERISTICS

Determining the potential adverse visual effects caused by drilling of an exploratory oil well is based on a measure of the visual contrast, the relative change in the landscape and visibility, and how that change is perceived by sensitive viewers.

Visual contrast was determined by analyzing soil characteristics and vegetation types/patterns, and the presence or absence of existing contrasting elements in the landscape. Large differences in soil color in areas disturbed by construction activities (for example; exposed soils) can result in strong visual contrasts. Removal or disturbance of vegetation also may result in strong visual contrasts.

Visibility is an evaluation of how a viewer perceives contrasts in the context of the landscape. Terrain and vegetative screening, viewer position (looking down or looking up), distance zone (distance between viewer and project proposed activity), and the duration of view (length of viewing time) may affect how a viewer perceives the landscape from a particular viewpoint.

Three visual contrast levels, strong, moderate, and weak, were assigned to the project area. These contrasts are based on the disturbance predicted to result from the project activities. The level of visual contrast and the visibility of that contrast from sensitive viewpoints are combined to determine the potential visual effect to a view. Similarly, potential visual effects to scenic quality are determined by evaluating the visual contrast of the proposed road and alternative well site with the inventory of scenic quality. In addition, visual contrast levels were used to determine whether or not the expected changes in the landscape would comply with visual resource management guidelines.

Contrast levels would be strong if the change to the landscape caused by the clearing of well sites or roads to the sites is dominant and would attract the attention of a casual observer. Contrast levels would be weak if the change in the landscape is subordinate and not very noticeable.

Strong visual contrasts from project-related activities typically result from:

- contrasts caused by the construction of new road (for example; cuts and fills)
- the removal of trees for new road
- exposure of soils with contrasting color
- equipment (for example; drilling derricks, trucks)
- contrasts caused by tree stumps, slash, etc.

Moderate visual contrast from project-related activities are usually due to:

- contrasts caused by upgrading of existing unimproved roads (for example; two-track roads or 4WD trails)
- the removal of low-growing vegetation (for example; sage or dense grasslands)

Weak visual contrasts are a result of minimal changes and for activities are usually from:

- minimal removal of vegetation
- color of exposed soils and undisturbed soils are similar
- minor upgrades of roads

Each alternative was evaluated for its potential to result in strong, moderate, and weak contrasts. Initial impact levels were determined through an analysis of how these visual contrasts would be perceived from sensitive viewpoints, with consideration to the general ability of the surrounding landscape to absorb visual change. Mitigation measures were then applied to these initial impact levels to determine residual impact levels.

Significance Criteria Impacts to the visual characteristics of the area were considered significant if:

- project activities long-term (five years) produce modifications in land form and vegetation or the addition of a structure that are incompatible with the visual quality objectives as defined by the Forest Service

All Forest Service visual quality objectives would be met.

Application of Forest Plan Direction The Forest Plan states that the Forest will be managed to provide for a pleasing visual landscape (Forest Plan, page IV-6) Management Area direction states that the Forest will manage the visual quality objectives as mapped and described in the forest-wide standards of the Forest Plan (Forest Plan, pages IV-25 and IV-76).

Impacts Common to All Action Alternatives

Alternative Well Sites A and B are located in the southern portion of the project area. This portion of the project area is largely unseen from sensitive viewpoints due to the density of existing vegetation (lodgepole pine and aspen). Potential visual impacts associated with the exploratory oil well and access road include the following types:

- impacts to sensitive viewpoints
- impacts to the visual quality of the landscape
- compliance with the VQOs of the Forest Plan

Project-related activities (well site and road) would likely result in moderate to high visual impacts. Where these activities are visible from adjacent roads or highways, strong visual contrasts would result in adverse impacts to sensitive viewers.

Strong contrasts would occur during drilling and road construction; however, the presence of equipment would be noticeable for only short term.

The majority of impacts identified were the result of visual contrasts visible from sensitive viewpoints. High impacts would likely result from strong contrasts in the foreground. Moderate impacts would likely result from strong contrasts visible in the middleground view and moderate contrasts in the foreground view.

Although high visual contrasts would occur in the areas with the VQOs of Partial Retention and in unseen areas of Modification, dense vegetation would screen the disturbed areas from high sensitivity viewpoints. Because most highly sensitive views would be screened by vegetation and/or landforms, these strong contrasts are expected to meet Forest Plan visual quality objectives once mitigation is applied. Weak to moderate visual contrasts (for example; low-growth vegetation removal and soil color contrast as a result of widening portions of the existing road) would occur where Peninsula Road would be upgraded for access. Some of these contrasts may be visible to foreground views from the Stillwater Road (sensitivity level 1) for approximately .25 mile where the Peninsula Road meets the Stillwater Road. Mitigation would be expected to minimize these contrasts and result in low to moderate visual impacts.

The improvements to the Peninsula Road would not be visually evident from sensitive viewpoints and would be expected to meet the visual quality objectives as defined in the Forest Plan.

The gravel source (Alternative Gravel Source C) would be screened from viewpoints by dense vegetation surrounding the site. Moderate to strong potential contrasts in the foreground and middleground would result in low to moderate visual impacts to views from the end of the existing Peninsula road. Dense

vegetation would screen these areas from sensitivity level 1 viewpoints. With mitigation, potential impacts would be expected to meet Forest Plan visual quality objectives.

The temporary water pipeline would not be readily visible. The pipeline would be placed on the ground and screened by vegetation.

Effects of Each Alternative

No Action There would be no impacts to the visual environment. The scenic values would remain essentially as they exist today. Visual Quality Objectives would not change.

Alternative Well Site A Visual contrasts associated with site clearing and the presence of drilling and production equipment at the well site would be screened by tree cover. Potential visual impacts to sensitive viewers would be low to not identifiable.Because site disturbance would not be visible from sensitive viewpoints, contrasts at the well site also would be expected to meet the Forest Plan visual quality objectives.

Alternative Well Site B This alternative would require 7.3 miles of construction and reconstruction of roads. Impacts associated with the new road as described above also would apply to this alternative.

Moderate visual contrasts visible top middleground and background views from the Mirror Lake Highway (sensitivity level 1) would occur where the road switches back on the north facing slope. These contrasts would result in low to moderate visual impacts, where disturbances associated with the construction of road would be visible on the hillside. Recreation users also may get glimpses of this area from the northern portion of the Stillwater Road (sensitivity level 1). Mitigation is expected to minimize these contrasts and would result in low to moderate visual impacts.

Similar to Alternative Well Site A, this alternative site would not be visible to sensitive viewpoints due to screening by trees. In addition, the position of the site higher on the ridge would be out of the angle of view from high sensitivity.

The construction of the new road would not be visually evident from sensitive viewpoints. The majority of the road would be located in unseen areas and would be expected to meet the visual quality objective of Modification.

Road Management Alternatives The effects on visual resources would be as discussed above, except for the Reclaimed-or Rehabilitated Road Management Alternative which would return the road to a near natural condition.

Mitigation

The following mitigation measures were developed to reduce the visual contrasts caused by project-related activities:

- follow natural vegetation boundaries and "feather" vegetation along clearing edges
- shape cut and fill slopes to repeat adjacent landforms
- align roads to take advantage of existing vegetation and landforms to screen views
- use native materials for structures
- minimize construction disturbance
- grade disturbed areas to blend naturally with existing contours, where possible
- revegetate with native species in foreground distance zones of highly sensitive viewpoints

- randomly distribute rocks and boulders removed during construction over disturbed areas to protect the steep slopes and reduce erosion potential
- water roads for dust abatement.
- production facilities to blend with the colors of the surrounding environment

Cumulative Effects

There are no reasonably foreseeable activities planned beyond those addressed in this section except for the Main Fork Timber Sale (see Timber Section of this Chapter). If additional development of any kind occurs that results in alteration of the landscape, visual impacts could result. With regard to development of additional roads, the Forest must evaluate existing roads and determine the appropriate road density needed for public use and resource protection (Forest Plan, page IV-101). (Also see Forest-wide Road Management Standards Forest Plan, page IV-43). If other actions are planned in the future, further environmental review would address cumulative effects.

NOISE

Significance Criteria Impacts caused by noise were considered significant if:

- there is any long-term exceedance of Federal noise standards (55 dBA) at noise-sensitive areas.

The primary noise-sensitive area in the area is the Christmas Meadows summer home area and Christmas Meadows campground 1.0 to 1.25 miles away from the project area. Background noise from the operation is predicted to be about 36 dBA at the well site and would attenuate with distance, especially with the muffling effect of the rugged terrain and dense vegetation. Therefore, the threshold noise level of 55 dBA would not be reached resulting in no significant impacts from project-related noise.

Application of Forest Plan Direction There are no specific Forest Service standards or guidelines applicable to noise in the Forest Plan.

Impacts Common to All Action Alternatives

Refer to the paragraph regarding significance criteria. Noise associated with construction and drilling would be short term.

Effects of Each Alternative

No Action Under this alternative, the environment would remain as it exists with no well site or road constructed.

Alternative Well Sites A or B Impacts would be the same regardless of the alternative.

Road Management Alternatives Under the Open Road Management Alternative there would be more noise from vehicles and people than would be produced under the Closed Road Alternative. To those expecting the quiet and solitude this might seem like a significant impact. If the well produces oil, this impact would remain as long as the oil is transported by trucks (2 to 3 per day).

Mitigation

Specific mitigation was not necessary. Vehicle operation on roads and work at the site would be conducted in a responsible manner. No excessive noise over and above normal noise at the well site is expected.

Cumulative Effects

There are no reasonably foreseeable activities planned beyond those addressed in this section except for the Main Fork Timber Sale (see Timber Section of this Chapter). Noise, associated with this project, would be short term occurring primarily in association with activities of construction, drilling, and preparation for production. If another activity or activities were to occur at the same time as this proposed project, there could be a cumulative increase in noise. However, if other actions are planned in the future, further environmental review would address cumulative effects.

CULTURAL RESOURCES

Significance Criteria Impacts to cultural resources are considered significant if:

- project activities result in the loss or modification of cultural resources eligible to the National Register of Historic Places unless mitigated through an approved mitigation plan in consultation with the State Historic Preservation Office
- any information is lost that impedes efforts to reconstruct the prehistory or history of the region

Application of Forest Plan Direction Forest-wide management goals include the protection of the cultural resources located on the Forest from land-disturbing activities and vandalism. Forest Management Area standards and guidelines state that when a site-disturbing project is proposed, the site must be investigated for cultural resources prior to project initiation. Also, the Forest is to protect the Howe Flume Historic District from unauthorized disturbance and undesirable deterioration from natural processes by signing, fencing, patrolling, rehabilitating, and other means.

Impacts Common to All Action Alternatives

The proposed drilling of the exploratory well would involve terrain disturbances that have the potential to damage or destroy archaeological and historical sites. These include construction of a well pad with associated onsite quarters for five personnel. In addition, an existing road would have to be upgraded, new road would have to be constructed, and a gravel source would have to be developed to surface the roads and well pad area.

Two alternative well locations are being considered. The disturbance zone around each would be essentially identical, encompassing 3.43 acres for the well pad, reserve pit, other facilities and equipment, and two temporary structures for the onsite personnel. During the reconnaissance survey conducted in September 1991, approximately five to six acres (a 500 feet by 500 feet square) were examined at both staked alternative well locations. No cultural resources were noted at either location.

From a cultural resource perspective, neither well location should result in any direct impacts. However, Alternative Well Site A may have some advantages over Alternative Well Site B because it would require construction of 1.6 miles less of new access road.

On June 25, 1976, a cultural resource survey was conducted for the Peninsula Pole Timber Sale. The layout of the proposed road system (now the Peninsula Road) and cutting units took into account the findings of that survey. Gravel Source Site C is located within a cutting unit which was examined at that time and has since been cut. Gravel Source Site C will not have any effects on cultural resources.

The September 1991 reconnaissance survey of the Peninsula road included walking two transects on each side of this road and no cultural resources were found. Thus, the grading activities along the existing road should have no effect on any cultural resources.

Similar transects were walked along the last three miles into Well Site A, examining a 200-foot-wide corridor. The route was clearly flagged in the field and the field archaeologists had detailed preliminary engineering drawings (scale 1 inch = 100 feet) to facilitate their reconnaissance. Approximately two of the three miles of this proposed access road goes through the Howe Flume Historic District.

The reconnaissance indicated that several historic features within the Howe Flume Historic District are located within the path of the proposed access road or immediately adjacent to it. These include skid roads, historic cabins, and remnants of the Howe Flume. Each is described in the following paragraphs in relation to survey stations marked along the proposed route (referred to as "STA" or "P.I."s).

Skid Roads (cleared areas used for dragging logs to the flume) The proposed access road would cross four skid roads that appear to have been unmodified and unused for at least fifty years. These roads apparently allowed access between the nearby timbering areas and the landings adjacent to the flume. These roads would be impacted where the proposed road crosses them or runs immediately uphill of them.

Near Station (STA) 17 + 63.80, the proposed access road crosses a skid road and parallels it about 100 feet away on the downhill side for approximately 800 feet. At this point (near STA 28 + 30.10), the proposed access road switches back across the skid road and parallels it within 50 feet on the uphill side for approximately 1,000 feet. At approximately STA 81 + 09.60 and STA 108 + 58.50 the proposed access road crosses two other skid roads. Between STA 124 + 30.50 and STA 127 + 30.70, the proposed access road parallels another skid road within 50 feet for a distance of about 300 feet. In sum, the proposed access road would likely impact severely portions of skid roads at five crossings and where it closely parallels skid road segments for approximately 1,300 feet.

The proposed access road would affect three other historic roads that have lost some of their integrity through use as 4WD trails. Between STA 33 + 06 and STA 33 + 65.90, the proposed access road crosses the road identified on the Christmas Meadows topographic map as the Gold Hill Road. This road is very likely the original road that paralleled the Howe Flume and connected the camps along it with the main historical tie-hacking administrative center at Gold Hill. After crossing the old road, the proposed new access road parallels it on the downhill side within about 20 feet for approximately 300 feet (to approximately STA 37 + 33.30). Between STA 37 + 98.90 and 50 + 38.20 the new alignment runs approximately 100 feet below the old road and this segment of the old road should not be affected.

At STA 50 + 38.20, the proposed access road perpendicularly crosses what appears to be an old skid road that ties into the historic road running along the flume. It appears to have been maintained as a 4WD trail. Between STA 110 + 78.82 and approximately STA 110 + 99.92, the proposed access road again crosses the main road that paralleled the flume. This road apparently supplied the camps near the dam at the head of the flume. Although the topographic map identifies this only as a pack trail, it has clearly been used as a 4WD trail.

These old roads were not specifically identified in the Howe Flume Historic District nomination as significant features of the district. The State Historic Preservation Office and the Advisory Council have been

consulted. A Memorandum of Agreement (Appendix F) outlines mitigation procedures specifically addressing cultural resources.

Log Cabins At two locations, the proposed access road would be adjacent to the ruins of log cabins that were not documented in the original Howe Flume Historic District nomination. Nevertheless, these cabins were probably residences of tie hackers and thus directly related to the construction and use of the Howe Flume in the 1870s.

One of these cabins is located at STA 31 + 40.50, about 23 feet east of the proposed access road. The cabin measures 12 feet square, has a door on the south side, and the remains of an exterior fireplace and chimney on the north side. The remaining walls stand six logs high, but the small diameter logs are badly decomposed. No associated artifacts or features were identified near this cabin.

Another log cabin is located about 75 feet west of the proposed road near STA 126 + 04. The cabin measures 12 feet square, has a 4-foot wide door in the northwest corner, and has an associated trash scatter and probable latrine pit on the southwest side. Two hundred feet to the west is a small pond or improved spring, which may explain the presence of the cabin at this location. The thick, hand-hewn logs show little rot and stand about four logs high. The cabin is barely visible from the centerline of the proposed new access road because of new growth timber.

Although neither of these cabins were specifically identified in the nomination form of the Howe Flume Historic District, they are similar and as well preserved as most of the other ten cabins that were identified in the original district nomination. With careful construction, direct impacts to both of these log cabin features can be avoided.

Howe Flume All that remains of the Howe Flume in most locations are remnants of the 4-foot square log cribs of various heights, which supported the milled timber flume. The best preserved segments of the flume are in the wet meadows, well away from the proposed access road. In these swampy locations, much of the original flume can still be seen, perhaps due to the difficulty in salvaging the lumber.

The proposed access road would cross the alignment of the flume in three locations. At approximately STA 33 + 06, the proposed access road crosses the flume alignment parallel to the Gold Hill Road. However, no physical evidence of the flume remains at this location.

On a steep slope between STA 33 + 65.90 and STA 37 + 33.30, the proposed access road is 30 to 60 feet uphill from and parallel to the Howe Flume. At this location, the flume retains very good integrity with all of the cribbing intact although it has slid downhill somewhat probably due to the weight of snow cover. Construction of the access road would have to be properly engineered and monitored to assure that the flume is not disturbed. Undoubtedly, the greatest potential adverse effect to any of the features within the historic district is at this location.

At approximately STA 110 + 99.92, the proposed access road perpendicularly crosses the flume alignment. At this location, the flume retains very little integrity and can be identified only by isolated spikes and occasional pieces of scattered timber. The structure of the cribbing, which is so obvious elsewhere along the flume, is unrecognizable here, perhaps due to the periodic flooding of the adjacent Main Fork of the Bear River.

On August 29, 1985, a Cultural Resource Evaluation was conducted by Archeological-Environmental Research Corporation for a project proposed by Amoco Production Company. Amoco had proposed (proposal was later dropped) constructing and drilling an exploratory oil well approximately 1/3 mile south east of where well site B is located. Although the drilling locations are 1/3 mile apart, a significant portion

of the access road between Alternative Well Sites A and B, in Section 16, follow much of the same corridor which would have been used for the Amoco project. This report recommended a determination of "No Effect" for that project. On September 26, 1991, the potential access route between well site A and well site B was surveyed in its entirety. No cultural resources were noted.

Effects of Each Alternative

No Action Under this alternative, the environment would remain as it exists with no well site or road constructed.

Alternative Well Site A or B No impacts are anticipated at either well site. Addition access roads would need to be constructed to either well site. The historic features that were found during the cultural resource surveys are located below well site A. There were no historic feature found between well site A and well site B. Since access to well site B would utilize the same corridor as that for well site A, impacts to cultural resources would be the same as discussed above under Impacts Common to All Action Alternatives.

All legal consultation requirements have been completed with the Utah State Historical Preservation Office (SHPO) and the Advisory Council and a Memorandum of Agreement is in place which addresses effects and mitigation (Appendix F) and protects the archeological information potential of the area.

Road Management Alternatives The Table Top Prospect also could result in indirect impacts related primarily to increasing access and visitation of archaeological and historical site areas. The potential for impacts would vary depending on what road management alternative is selected. Depending on how access is controlled, the secondary impacts might be adverse, neutral, or beneficial.

Increased access could result in adverse effects if it leads to an increase in intentional vandalism at historic sites. For example, if easier access results in bottle hunters looting sites within the Howe Flume Historic District, this would degrade the potential of the district to yield important information through further archaeological research. In addition, more recreational use could result in unintentional degradation.

With the Open Road Management Alternative, the potential for degradation of the historic district would extend beyond the eight to ten months of drilling activities. At the same time, the open road alternative would lead to beneficial effects if the increased access were to be used to enhance public interpretation of the Howe Flume Historic District. The road would create an improved trailhead facility for the Hell Hole Lake Wilderness Trail and development of a brochure could be used to tell the history of tie hacking to a broader audience and enhance the outdoor experience for recreational hikers.

Mitigation

The potential direct adverse impacts stem from road work from the end of the existing Peninsula Road to Alternative Well Site A which passes through the Howe Flume Historic District. The alternative of siting a road outside the district boundaries has been rejected as being too destructive and damaging to other environmental resources. Minor adjustments of the proposed road would be made to avoid the ruins of two historic log cabins as well as a few hundred feet of remnants of the Howe Flume located adjacent to the proposed road.

Consultations regarding the potential impacts of the Table Top Prospect on cultural resources have been completed with the Utah State Historic Preservation Officer in accordance with Section 106 of the National Historic Preservation Act. A memorandum of Agreement has been signed by the Advisory Council on

Historic Preservation, Forest Service, and Utah State Historic Preservation Office. The following stipulations are contained in that Memorandum of Agreement.

"The Forest Service will ensure that the following measures are carried out by qualified professionals to protect the archeological information potential of the property/district.

1) Protection of the portion of Howe Flume between Pl#s 43 and 48 by fencing. (See attached engineering drawings. It is possible that during proposed construction this section of the flume might be impacted by falling rocks or debris from regrading of the access road.) The fence will be constructed prior to earthmoving activities and regularly monitored by the Forest Service during construction to meet the intent of protection.

2) Public interpretation of the Howe Flume for National Forest visitors will be done. Depending on the nature of the final decision on how the access road will be managed, interpretation can be:

a) by permanent signs at the flume.

b) by brochure.

c) at the Bear River Guard Station as part of the general tie-hack interpretation being undertaken there.

d) by periodic guided tours presented by the Forest Service.

e) Some combination of the above items a-d.

3) If previously unrecorded historic or prehistoric remains are encountered during construction of the access road or well pad, ground disturbing activities within the immediate discovery area will be suspended until a professional consideration and evaluation of those remains can be accomplished. The SHPO and the Advisory Council will be consulted as provided in 36CFR800.11 to assess the effects of the project on the newly discovered materials.

Execution of the Memorandum of Agreement and implementation of its terms evidence that the Forest Service has afforded the Council an opportunity to comment on the Chevron Table Top Project and its effects on historic properties, and that the Forest Service has taken into account the effects of the undertaking on historic properties."

Cumulative Effects

There are no reasonably foreseeable activities planned beyond those addressed in this section except for the Main Fork Timber Sale (see Timber Section of this Chapter). The road through the Howe Flume Historic District has provided access to recreationists to and through the District and most likely has contributed, at least to some extent, to the degradation of the cultural values of the District. The major culprit had been time and weather. If additional development occurs or other uses (such as recreation) increase, additional degradation and/or vandalism, whether intentional or unintentional may result. However, if other actions are planned in the future, further environmental review would address cumulative effects.

CONFORMANCE WITH THE FOREST PLAN

The proposed project with the planned mitigation measures has been analyzed and found to be in conformance with the Forest Plan and its goal, management direction, and standards and guidelines.

RELATIONSHIP BETWEEN SHORT-TERM USE AND LONG-TERM PRODUCTIVITY

Long-term productivity refers to the capability of the Forest to provide resources in the future.

Land used and maintained as roads would no longer produce vegetation/habitat. Roads left open and not revegetated after use would provide future access for resource management. Roads closed can be reclaimed and returned to near-preconstruction condition.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

An irreversible commitment of resources refers to the loss of production or use of a resource due to a land use that, once executed, cannot be changed. An irretrievable commitment of resources refers to losses of production or use of renewable resources for a period of time.

Minor amounts of soil loss and displacement would occur in all action alternatives.

Roads left in place and in a usable condition for future vehicle access would remove approximately two acres per mile of vegetation from production (that is; trees would not be regenerated and grown on these acres. However, roads can be reclaimed to near-preconstruction condition.

Both alternative well sites would commit a small portion of the roadless resource to development of roads and the well pad. The roadless resource values lost would not be recovered unless the roads were reclaimed and returned to near-preconstruction condition and the area is once again roadless.

UNAVOIDABLE ADVERSE ENVIRONMENTAL EFFECTS

Implementation of any alternative produces some adverse environmental effects. Many of the effects are mitigated by using Forest Plan Standards and Guidelines and specific mitigation measures. The unavoidable effects listed below are those that are expected to occur after application of mitigation measures.

Road and drill pad construction may result in short term soil erosion until slopes revegetate and stabilize.

Visitor experience may be adversely affected by road construction/reconstruction, drill pad construction and drilling.

CHAPTER 5 - CONSULTATION AND COORDINATION

CHAPTER 5 – CONSULTATION AND COORDINATION

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CHAPTER 6 – PREPARERS AND CONTRIBUTORS

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CHAPTER 7 - LITERATURE CITED

CHAPTER 7 – LITERATURE CITED

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CHAPTER 8 - GLOSSARY

CHAPTER 8 - GLOSSARY

ACRONYMS AND ABBREVIATIONS

4WD	Four-wheel-drive vehicle
AADT	Average annual daily trips
AMS	Analysis of the Management Situation
APD	Application for Permit to Drill
ASQ	Allowable Sale Quantity
AUM	Animal Unit Month
BCI	Biological Condition Index
BLM	Bureau of Land Management
BOD	Biochemical Oxygen Demand
CFR	Code of Federal Regulations
cfs	Cubic feet per second
CEQ	Council on Environmental Quality
dbh	Diameter at Breast Height
DEIS	Draft Environmental Impact Statement
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
FLPMA	Federal Land Policy and Management Act
Forest Plan	Forest Land and Resource Management Plan
ft/d	Feet per day
ft3/d/ft	Cubic feet per day per foot
FWS	U.S. Fish and Wildlife Service
HCI	Habitat Condition Index
lbs/acre	Pounds per acre
Mcf	Thousand Cubic Feet
mg/l	Milligrams per liter
MIS	Management Indicator Species
mmhos/cm	Millimhos per centimeter
NEPA	National Environmental Policy Act
NPDES	National Pollution Discharge Elimination System
NRHP	National Register of Historic Places
NSO	No Surface Occupancy
NTL	Notice to Lessee(s)
psi	Pounds per square inch
PSIAC	Pacific Southwest Interagency Committee
PUB3E	Palustrine, unconsolidated bed of mud, and seasonally saturated
PEM1F	Palustrine, emergent, persistent (upright plants), semipermanently flooded
RCRA	Resource Conservation and Recovery Act
R3RB2	Riverine, supper perennial, with rock bottom of boulders
RN	Roaded Natural
RNA	Roaded Natural Appearing
ROS	Recreation Opportunity Spectrum
ROW	Right-of-Way
RVD	Recreation Visitor Day
SHPO	State Historic Preservation Office
SPCC	Spill Containment and Contingency
SPM	Semiprimitive Motorized
SPNM	Semiprimitive Nonmotorized
SUPO	Surface Use Plan of Operations
TES	Threatened, Endangered and Sensitive (Species)

UDES	Utah Department of Employment Security
UDWR	Utah Division of Wildlife Resources
UOPD	Utah Office of Planning and Development
USGS	U.S. Geological Survey
USLE	Universal Soil Loss Equation
VMS	Visual Management System
VQO	Visual Quality Objective
VRM	Visual Resource Management
WDAFC	Wyoming Department of Administrative and Fiscal Control

GLOSSARY

Abandonment	Termination of operations for production from a well. Permanent abandonment involves plugging the well and removal of installations.
Acre Foot	The amount of water it would take to cover an acre of land to a depth of one foot.
Affected Environment	Surface or subsurface resources (including social and economic elements) within or adjacent to a geographic area which could potentially be affected by oil and gas activities. The environment of the area to be affected or created by the alternatives under consideration. (40 CFR 1502.15)
Air Quality Classes	Classifications established under the Prevention of Significant Deterioration portion of the Clean Air Act which limit the amount of air pollution considered significant within an area. Class I applies to areas where almost any change in air quality would be significant; Class II applies to areas where the deterioration normally accompanying moderate well-controlled growth would be permitted; and Class III applies to areas where industrial deterioration would generally be allowed.
Alluvial Soil	A soil developing from recently deposited alluvium and exhibiting essentially no horizon development or modification of the recently deposited materials.
Alluvium	Clay, silt, sand, gravel, or other rock materials transported by flowing water. Deposited in comparatively recent geologic time as sorted or semisorted sediment in riverbeds, estuaries, floodplains, lakes and shores, and in fans at the base of mountain slopes.
Analysis Area	A delineated area of land subject to analysis of (1) responses to proposed management practices in the production, enhancement, or maintenance of forest and rangeland outputs and environmental quality objectives, and (2) economic and social impacts.
Animal Unit Month (AUM)	The amount of forage necessary to sustain one cow and one calf or its equivalent for one month.
Anticline	A fold, generally convex upward, whose core contains the stratigraphically older rocks.
Application	A written request, petition, or offer to lease lands for the purpose of oil and gas exploration and/or the right of extraction.
Application for Permit (APD)	An application to drill a well submitted by a lessee or operator to Drill to the BLM. The APD consists of a Drilling Plan that discusses downhole specifications and procedures (reviewed by the BLM) and a Surface Use Plan of Operations (SUPO) that examines surface uses, including access roads, well site layout, cut and fill diagrams, reclamation procedures, production facility locations, etc. (reviewed by the Forest Service). The approved APD is a contract between the operator and the Federal government and cannot be changed or modified unless authorized by the BLM and the Forest Service.
Aquatic Ecosystem	All organisms in a water-based community plus the associated

environmental factors.

Authorized Forest	The Forest Service employee delegated Officer the authority to perform a duty described in these rules. Generally, a Regional Forester, Forest Supervisor, District Ranger, or Minerals Staff Officer, depending on the scope and level of the duty to be performed.
Background	One of the distance zones of a landscape being viewed. Extends from middleground to infinity. Texture is seen as groups or patterns of trees.
Basin	(a) A depressed area with no surface outlet. (b) A low in the Earth's crust of tectonic origin in which sediments have accumulated.
Big Game	Larger species of wildlife that are hunted, such as elk, deer, bighorn sheep, and pronghorn antelope.
Big Game Winter Range	The area available to and used by big game (large mammals normally managed for sport hunting) through the winter season.
Browse	That part of the current leaf and twig growth of shrubs, woody vines and trees available for animal consumption.
Candidate Species	Any species not yet officially listed but which are undergoing a status review or are proposed for listing according to Federal Register notices published by the Secretary of the Interior or the Secretary of Commerce.
Cirque (geology)	Semicircular, concave, bowl-like areas that have steep faces primarily resulting from glacial ice and snow abrasion.
Condition of Approval (COA)	Conditions or provisions (requirements) under which an Application for a Permit to Drill or a Sundry Notice is approved.
Controlled Surface Use	Allowed use and occupancy (unless restricted by another stipulation) with identified resource values requiring special operational constraints that may modify the lease rights. Controlled Surface Use is used as an operating guideline, not as a substitute for NSO or Timing stipulations.
Crucial Habitat	A biological feature, that if lost, would adversely affect the species.
Cultural Resources	Those fragile and nonrenewable remains of human activity, occupation, or endeavor reflected in districts, sites, structures, buildings, objects, artifacts, ruins, works of art, architecture, and natural features that were of importance in human events.
Cultural Resources Inventory Classes	
Class I	An existing data survey. This is an inventory of a study area to (1) provide a narrative overview of cultural resources by using existing information, and (2) compile existing cultural resources site record data on which to base the development of the Forest's site record system.
Class II	A sampling field inventory designated to locate, from surface and exposed profile indications, all cultural resource sites within a portion of an area so that an estimate can be made of the cultural resources for the entire area.
Class III	An intensive field inventory designed to locate, from surface and exposed

	profile indications, all cultural resource sites in an area. Upon its completion, no further cultural resources inventory work is normally needed.
Cumulative Impact	The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or nonFederal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.
Developed Recreation	Recreation which occurs at man-made developments, such as campgrounds, picnic grounds, resorts, ski areas, trailheads, etc.
Distance Zone	The divisions of a landscape being viewed. Three zones are used to describe a landscape: foreground, middleground, background.
Diversity	(1) The relative abundance of wildlife species, plant species, communities, habitats, or habitat features per unit of area. (2) The distribution and abundance of different plant and animal communities and species within the area covered by a Land and Resource Management Plan (36 CFR Part 219.3(g)).
Duration	As pertains to visual evaluation criteria: the length of time the management activity and its impacts will be taking place.
Ecosystem	All organisms in a community plus the associated environmental factors.
Effects	
Direct Effects	Caused by the action and occur at the same time and place.
Indirect Effects	Caused by the action later in time or farther removed in distance, but still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.
Endangered Species	Any species which is in danger of extinction throughout all or a significant portion of its range.
Enhancement	A short-term visual resource management objective aimed at increasing positive visual variety where little variety now exists.
Environmental Assessment	A concise public document prepared to provide sufficient (EA) evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact. It includes a brief discussion of the need for the proposal, alternatives considered, environmental impact of the proposed action and alternatives, and a list of agencies and individuals consulted.
Environmental Impact	A formal public document prepared to Statement (EIS) analyze the impacts on the environment of the proposed project or action and released for comment and review. An EIS must meet the requirements of NEPA, CEQ guidelines, and directives of the agency responsible for the proposed project or action.

Erosion	(1) The wearing away of the land surface by running water, wind, ice, or other geological agents, including such processes as gravitational creep. (2) Detachment and movement of soil or rock fragments by water, wind, ice, or gravity.
Erosion Hazard	The probability of soil loss resulting from complete removal of vegetation and litter. It is an interpretation based on potential soil loss in relation to tolerance values. Soil loss tolerance rate: an estimate of erosion which could occur over a short period of time (one year) without causing irreparable damage to the long-term productivity of the soil.
Ratings: Slight	Potential soil loss rates do not exceed tolerance soil loss. Loss in soil production potential from erosion is of low probability.
Moderate	Potential soil loss rates exceed tolerance soil loss. Loss in soil production potential from erosion is probable and significant if unmitigated. On-site investigation by watershed specialists may be needed for activities on such areas.
Severe	Potential soil loss rates exceed tolerance soil loss. Loss in soil production potential from erosion is inevitable and irreversible if unmitigated. These soils may require expensive measures to control erosion and sedimentation when activities are planned for such areas. On-site investigation by watershed specialists is highly recommended.
Facies	The aspect, appearance, and characteristics of a rock unit, usually reflecting the conditions of its origin; especially as differentiating the unit from adjacent or associated units.
Federal Land Policy and Management Act of 1976 (FLPMA)	Public Law 94-579 signed by the President on October 21, 1976. Established public land policy for management lands administered by the Bureau of Land Management (BLM). FLPMA specifies several key directions for the BLM, notably (1) management on the basis of multiple-use and sustained yield, (2) land use plans prepared to guide management actions, (3) public lands for the protection, development, and enhancement of resources, (4) public lands retained in Federal ownership, and (5) public participation used in reaching management decisions.
Fines	A ground or powdered substance, as ore; a collection of minute particles of different sizes.
Fold	A curve or bend of a planar structure such as rock strata, bedding planes, foliation, or cleavage. A fold is usually a product of deformation, although its definition is descriptive and not genetic and may include primary structures.
Forage	All browse and herbaceous foods that are available to grazing animals.
Foreground	One of the distant zones of a landscape being viewed. Distance at which details can be perceived, normally within .25 to .5 mile of the viewer. Must be determined on a case by case basis.
Forest Management	The application of business methods and technical forestry principles to the operation of a forest property.

Form	The mass of an object or objects that appear unified.
Formation	A body of rock identified by lithic characteristics and stratigraphic position; it is prevailingly but not necessarily tabular, and is mappable at the earth's surface or traceable in the subsurface (NACSN, 2984, Art.24).
Fossil	The remains or traces of an organism or assemblage of organisms which have been preserved by natural processes in the earth's crust exclusive of organisms which have been buried since the beginning of historical time. Minerals, such as oil and gas, coal, oil shale, bitumen, lignite, asphaltum, and tar sands, phosphate, limestone, diatomaceous earth, uranium and vanadium, while they may be of biologic origin, are not here considered "fossils". Fossils of scientific value may occur within or in association with such materials.
Fragile Soil	A soil that is especially vulnerable to erosion or deterioration due to its physical characteristics and/or location. Disturbance to the surface or the vegetative cover can initiate a rapid cycle of loss and destruction of the soil material, structure, and ability to sustain a biotic community.
Glacial Till	Unsorted, nonstratified glacial drift consisting of soil material and boulders transported and deposited by glacial ice.
Habitat	A specific set of physical conditions that surround a single species, a group of species, or a large community. In wildlife management, the major components of habitat are considered to be food, water, cover, and living space.
Hydrocarbon	Any organic compound, gaseous, liquid, or solid, consisting solely of carbon and hydrogen.
Impact	The effect, influence, alteration, or imprint caused by an action.
Invertebrate	An animal lacking a spinal column.
Land Treatment	All methods of artificial range improvement and soil stabilization such as reseeding, brush control (chemical and mechanical), pitting, furrowing, water spreading, etc.
Lease Stipulations	Additional specific terms and conditions that change the manner in which operation may be conducted on a lease, or modify the lease rights granted.
Long-Term	Describes impacts that would occur over a 20-year period.
Management Area	An area with similar management objectives and a common management prescription.
Management Direction	A statement of multiple use, other goals, and objectives; and associated management prescriptions, standards, and guidelines for attaining them (36 CFR Part 219.3).
Management Indicator Species	Those wildlife species selected in the planning process to monitor the effects of planned management activities of viable populations of all wildlife and fish species including those species that are socially or economically important.

Middleground	One of the distance zones of a landscape being viewed. This zone extends from the limit of the foreground to three to five miles from the observer. Texture is characterized by masses of trees.
Millimhos (mmhos)	Reciprocal of ohm; measure of electrical conductance to quantify salinity.
Mitigation	Includes: (a) Avoiding the impact altogether by not taking a certain action or parts of an action. (b) Minimizing impacts by limiting the degree of magnitude of the action and its implementation. (c) Rectifying the impact of repairing, rehabilitating, or restoring the affected environment. (d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action. (e) Compensating for the impact by replacing or providing substitute resources or environments.
Multiple-use	Management of the surface and subsurface resources so that they are jointly used in the manner that will best meet the present and future needs of the public without permanent impairment of the productivity of the land or the quality of the environment.
National Environmental Policy Act of 1969 (NEPA)	Public Law 91-190. Establishes environmental policy for the nation. Among other items, NEPA requires Federal (NEPA) agencies to consider environmental values in decision-making processes.
National Forest System	All National Forest lands reserved or withdrawn from the public domain of the United States; all National Forest lands acquired through purchase, exchange, donation, or other means the National Grasslands and Land utilization projects administered under Title III of the Bankhead-Jones Farm Tenant Act (7 U.S.C. 1010 et seq.); and other lands, waters, or interests therein which are administered by the Forest Service or are designated for administration through the Forest Service as a part of the system (16 U.S.C. 1609).
National Register of Historic Places local, state, or(NRHP)	A listing of architectural, historical, archaeological, and cultural sites of national significance, established by the Historic Preservation Act of 1966 and maintained by the National Park Service.
No Surface Disturbance	Defined on a case-by-case basis when the activity plan for an area is developed. In general, an activity would be allowed if it would not interfere with the management objectives of the area.
No Surface Occupancy (NSO)	A fluid mineral leasing stipulation that prohibits occupancy of disturbance

	on all or part of the land surface to protect special values or uses. The NSO stipulation includes stipulations which may have been worded as "No Surface Use/Occupancy," "No Surface Disturbance," "Conditional NSO," and "Surface Disturbance and Surface Occupancy Restriction by location." Lessees may use the oil and gas or geothermal resources under leases restricted by this stipulation through use of directional drilling from sites outside the no surface occupancy area.
Off-Road Vehicle (ORV)	Any motorized vehicle designed for or capable of cross-country travel on or immediately over land, water, snow, ice, marsh, swampland or other natural terrain. It includes, but is not limited to, four-wheel drive or low-pressure-tire vehicles, motorcycles and related two-wheel vehicles, amphibious machines, ground-effect or air-cushion vehicles.
Operations	Surface disturbing activities that are conducted on a leasehold on National Forest system lands pursuant to a current approved surface use plan of operations, including but not limited to, exploration, development, and production of oil and gas resources and reclamation of surface resources.
Overstory	That portion of a plant community consisting of the taller plants on the site; the forest or woodland canopy.
Paleontological Resource	A site containing evidence of nonhuman life of past geological periods, usually in the form of fossil remains.
Plant Community	A group of individual plants of one or more species growing in a specific area in association with one another and with a complex of other plants and animals.
Range Allotment	A designated area of land available for livestock grazing upon which a specified number and kind of livestock may be grazed under an allotment management plan. It is the basic land unit used to facilitate management of the range resource on National Forest system lands administered by the Forest Service.
Raptors	Birds of prey with sharp talons and strongly curved beaks (for example: hawks, owls, vultures, eagles).
Reclamation	Returning disturbed lands to a form and productivity that will be ecologically balanced and in conformity with a predetermined land management plan.
Recreation Opportunity Spectrum (ROS)	Land delineations which identify a variety of recreation experience opportunities in six classes along a continuum from primitive to urban. Each class is defined in terms of natural resource settings, activities and experience opportunities. The six classes are: Urban, Rural, Roaded Natural, Semiprimitive Motorized, Semiprimitive Nonmotorized, and Primitive.
Recreation Visitor Day (RVD)	An RVD is 12 hours of recreation for one person or one hour of recreation for 12 persons or any combination thereof.
Rehabilitation	A short-term visual resource management objective used to restore landscapes containing undesirable visual or other resource impacts to the desired visual or other acceptable quality level.

Restore	To bring back landscape to a former or original condition or appearance.
Revegetation Potential	The probable success and ease in establishment of native grass and shrub species. This rating is influenced by climate, topography, and soil type. Stratification by climate yields limitations that are not normally economical to mitigate. Ratings relate to use of a rangeland drill, broadcast seeding, and aerial seeding with no consideration for site preparation (removal of trees, etc.).
Ratings:	
Slight	Potential is not restricted by properties in the rating, and sites offer optimum conditions for establishment of plants.
Moderate	Potential is restricted by properties in the rating that can be reasonably or economically mitigated.
Severe	Potential is restricted by properties in the rating that severely restrict reasonable or economical means of mitigation.
Riparian	Riparian areas consist of terrestrial and aquatic ecosystems, those lands in a position to directly influence water quality and water resources, whether or not free water is available. This would include all lands in the active flood channel and lands immediately upslope of stream banks. These areas may be associated with lakes, reservoirs, estuaries, hotholes, marshes, streams, bogs, wet meadows, and intermittent or permanent streams where free and unbound water is available.
Roaded, Natural Appearing (RNA)	A recreation opportunity classification term for describing a land area that has predominately a natural appearing environment with moderate evidence of sights and sounds of humans. Concentration of users is moderate to low. Roads of better than primitive class are usually within 0.5 mile. A broad range of motorized and nonmotorized activity opportunities are available. Management activities including timber harvest are present and harmonize with the natural environment.
Roadless	Refers to the absence of roads that have been constructed and maintained by mechanical means to ensure regular and continuous use.
Roads	Vehicle routes which have been improved and maintained by mechanical means to ensure relatively regular and continuous use. (A way maintained strictly by the passage of vehicles does not constitute a road.)
Salinity	Refers to the solids such as sodium chloride (table salt) and alkali metals that are dissolved in water. Often in nonsaltwater areas, total dissolved solids is used as an equivalent.
Scoping Process	An early and open public participation process for determining particular issues to be addressed in an environmental document and for identifying the significant issues related to a proposed action.
Sediment Yield	The amount of sediment produced in a watershed, expressed as tons, acre-feet, or cubic yards of sediment per unit of drainage area per year.
Semiprimitive	A recreation opportunity classification term for describing land areas that have very few management controls lying between .5 mile and 3 miles from the nearest point of motor vehicle access, excepting four-wheel

	drive roads and trails, with mostly natural landscapes and some evidence of other people.
Semiprimitive Motorized (SPM)	A land area classified as semiprimitive that may have primitive roads present and where motorized use is permitted. Settings, activities and opportunities are affected accordingly though there is still a moderate probability of experiencing isolation from sights and sounds of humans.
Semiprimitive Nonmotorized (SPNM)	A land area classified as semiprimitive that has a natural environment and motorized use is not permitted. Nonmotorized status increases the probability of experiencing isolation, independence, and closeness to nature. Challenge and risk are generally high. Resource management may be present; however, natural appearance is still maintained.
Sensitivity Levels	A measure of people's concern for the scenic quality of the Forest. Sensitivity levels are developed for visitors viewing the Forest as a result of traveling by car, hiking, camping, fishing, or boating. Some degree of sensitivity is established for all National Forest System lands. Three levels of sensitivity are used, with one being most sensitive and three the least.
Significant	An effect that is analyzed in the context of the proposed action to determine the importance of the effect, either beneficial or adverse. The degree of significance is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment and when the effects on the quality of the human environment are likely to be highly controversial.
Skid Roads	Cleared areas used for dragging logs to a flume.
Slope	The amount or degree of deviation from the horizontal or vertical. Landscape is categorized into three slope classes: 0 to 15 percent, 16 to 40 percent, and greater than 40 percent. Concerning visual resources, as slope increases, views into a site and the size of the disturbance increase. Generally, the steeper slopes are more visible due to their location in the landscape.
Soil Fertility	The quality of a soil that enables it to provide nutrients in adequate amounts and in proper balance for the growth of specified plants when other growth factors are favorable.
Soil Texture	The relative proportions of sand, silt, and clay particles in a mass of soil. Basic textural classes, in order of increasing proportion of fine particles, are: sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay, and clay.
Stand	An aggregation of forested vegetation occupying a specific area and sufficiently uniform in species composition, age arrangement, and conditions as to be distinguishable from adjoining stands.
Stipulation	A provision that modifies standard lease rights and is attached to and made a part of the lease.
Stream Bank (and Channel) Erosion	The removal, transport, deposition, recutting, and bed-load movement of material in streams by concentrated water flows.

Suitability	As used in the Wilderness Act and in the Federal Land Policy and Management Act, refers to a recommendation by the Secretary of the Interior or the Secretary of Agriculture that certain Federal lands satisfying the definition of wilderness in the Wilderness Act have been found appropriate for designation as wilderness on the basis of an analysis of the existing and potential uses of the land.
Sundry Notice	Standard form to notify of or propose change of approved well operations subsequent to APD in accordance with 43 CFR 3162.3-2 BLM and Forest Service regulations.
Surface Use Plan of Operations (SUPO)	A plan for surface use, disturbance, and reclamation.
Tectonics	A branch of geology dealing with the broad architecture of the outer part of the earth; that is, the regional assembling of structural or deformative features and a study of their mutual relations, origin, and historical evolution.
Terrestrial	Living or growing in or on the land.
Terrestrial Ecosystem	All organisms in a land-based community plus the associated environmental factors.
Texture	Detail of landscape that varies with distance.
Threatened Species	Any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range and which has been designated in the Federal Register by the Secretary of Interior as a threatened species.
Thrust Fault	A fault with a dip of 45 degrees or less over much of its extent, on which the hanging wall (overlying side) appears to have moved upward relative to the footwall (underlying side).
Timber Production	The purposeful growing, tending, harvesting, and regeneration of regulated crops of trees to be cut into logs, bolts, or other round sections for industrial or consumer use. For planning purposes, the term "timber production" does not include production of fuelwood (36 CFR Part 219.3).
Timing Limitation (Seasonal Restriction)	Prohibits surface use during specified time periods to protect identified resource values. The stipulation does not apply to the operation and maintenance of production facilities unless the findings of analysis demonstrate the continued need for such mitigation and that less stringent, project-specific mitigation measures would be insufficient.
Total Dissolved Solids (TDS)	Salt, or an aggregate of carbonates, bicarbonates, chlorides, sulfates, phosphates, and nitrates of calcium, magnesium, manganese, sodium, potassium, and other cations that form salts.
Trailhead	Developed recreation sites with parking, signing, and other facilities designated to provide a take-off point for trail users at a major access point and terminus of a trail.
Understory	That portion of a plant community growing underneath the taller plants on the site.

Vertebrate	An animal having a spinal column.
Viewer Position	The relationship of the viewer to a specific site or structure (that is; whether a person is looking up at, down at, or across). Viewer position is classified as superior, normal, or inferior.
Visual Absorption Capability (VAC)	The relative ability of a landscape to accept management practices without affecting its visual characteristic. The capability to absorb visual change. A prediction of how difficult it will be for a landscape to meet recommended VQOs.
Visual Quality Objectives (VOQ)	Based upon variety class, sensitivity, level, and distance zone determinations. Each objective describes a different level of acceptable alteration based on aesthetic importance. The degree of alteration is based on contrast with the surrounding landscape.
Visual Resource	The composite of basic terrain, geologic features, water features, vegetative patterns, and land use effects that typify a land unit and influence the visual appeal of the unit.
Visual Management System (VMS)	Inventory and planning to identify visual resource values and establish objectives for managing those values, and the management actions taken to achieve those objectives.
Wetlands	Lands where saturation with water is the primary factor determining the nature of soil development and the kinds of animal and plant communities living under or on its surface.
Wilderness	An area of undeveloped Federal land designated Wilderness by Congress, retaining its primeval character and influence, without permanent improvements or human habitation, protected and managed to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or primitive and unconfined recreation; (3) has at least 5,000 acres or is of sufficient size to make practical its preservation and use in an unimpaired condition; and (4) may also contain features that are of ecological, geological, scientific, educational, scenic, or historical value. These characteristics were identified by Congress in the Wilderness Act of 1964.
Wilderness Management	Policy document prescribing the general objectives, policies, and specific activity guidance applicable to all designated Forest wilderness areas. Specific management objectives, requirements, and decisions implementing administrative practices and visitor activities in individual wildemess areas are developed and described in the wildemess management plan for each unit.

CHAPTER 9 – COMMENTS AND RESPONSES

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INTRODUCTION

The Draft Environmental Impact Statement (DEIS) for the Exploratory Oil Well, Chevron Table Top Prospect was released for public review in December, 1992. Copies of the DEIS were sent to all interested parties identified during the scoping process and appropriate local, state and federal agencies. Two public open houses were held (Salt Lake City, UT and Evanston, WY). In addition a public meeting was held in Salt Lake City, UT at the request of the public. The purpose of the open houses and public meeting was to answer questions, clarify parts of the document, and gather comments.

One hundred and twenty one letters, containing 76 comments, were received during the comment period which ran from December 24, 1992 to February 19, 1993. All comments were reviewed, including those received after the February 19, 1993 deadline, and are on file and available for public review at the Evanston Ranger District office. The Forest reviewed and considered these, and the comments received at the open houses and the public meetings. Changes in the FEIS were based upon the comments and on further analysis by the Forest Service. No decisions were based upon the quantity of comments received on a particular issue.

Numerous respondents either favored or opposed the proposal, or made personal statements of preference. These people are directed to the Record of Decision which explains the reasons the specific decisions were made.

In this chapter, the Forest Service responds to specific comments that were substantive or technical in nature, or that concerned questions about policy or procedure. The number following the comment identifies the respondent(s). A list of respondents in included at the end of this chapter with their identifying numbers.

Letters received on the DEIS from local, state, or federal agencies, and elected officials, have been duplicated in this chapter along with the Forest's response.

GENERAL

1 COMMENT: I believe that the mitigation measures identified within the DEIS in Chapters 2 and 4 as well as Appendices A through E are more than sufficient to adequately protect the affected resources within the project area while allowing Chevron's project to proceed. (23)

RESPONSE: Thank you for your comment.

2 COMMENT: I am deeply disturbed that the Forest Service arbitrarily decided to prepare an EIS for the Chevron project considering that the "EA" level of analysis proved sufficient for the Amoco project in 1985, and also for the American quasar project in 1987. (23)

RESPONSE: The decision to proceed with the documentation of the environmental analysis with an environmental impact statement (EIS) was based on a review of the regulations which discuss significance and when an EIS should be prepared. Public comments demonstrated a wide range of concern over effects of introducing a road into a roadless area. This controversy over effects led to a decision that an EIS was appropriate.

3 COMMENT: It is incumbent upon the authorizing agencies to fully explain to the interested public why consideration of the "No Action" alternative is required, and also explain why this alternative is generally unavailable for implementation despite consideration within the analysis document. (23)

RESPONSE: Consideration of the No Action alternative is required by 40 CFR 1502.14. We do not fully agree with the statement that this alternative is generally unavailable for implementation. Forest Service regulations (36 CFR 228.107) state that after review of the surface use plan of operations the authorized Forest Officer can decide that 1) The plan is approved as submitted; or 2) The plan is approved subject to specified conditions; or 3) the plan is disapproved for the reasons stated. Option 3 is normally described as the No Action Alternative, but is only disapproval of the surface use plan for a particular location at that given time. It can not be defined as disapproval of any surface use plan of operations on the lease (unless the lease is 100% NSO) without violating the rights granted by the lease. The description of the No Action alternative has been expanded and clarified in the FEIS (pgs. 2-19 & 2-20).

4 COMMENT: The economic impact section is limited to local economic interests directly tied to development. It ignores the values and importance that some local, and others living along the Wasatch Front, place on this area. (75, 85, 95, 108, 120)

RESPONSE: Additional information related to the values and importance some people place on this area has been added to the Socioeconomic section of Chapter 3 (pg. 3-30). Additional information has been added to the Socioeconomic section of Chapter 4 (pg. 4-36) which discusses the effects on those people and values.

5 COMMENT: The DEIS ignores the sense of wildness and place that is currently the Main Fork, and, equally as important, it fails to discuss the values of those who believe that the Main Fork ought to be left in its essentially undeveloped condition. (75, 85)

RESPONSE: The description of issue 4 states that "recreationists favoring rustic, dispersed recreation opportunities believe that the uses of recreation and the drilling and production of the oil well are incompatible and oppose development in this area". Also in Chapter 4 under Land Use, Alternative Well Site A, it states "Hikers would perceive a reduction in the apparent naturalness and natural integrity of the adjacent area." These are examples of how the values of those who believe that the Main Fork ought to be left in its essentially undeveloped condition, were considered in the analysis although not addressed in any one particular section. Additional information has also been added to the Socioeconomic sections located in Chapters 3 (pg. 3-30) and 4 (pg. 4-36).

6 COMMENT: The DEIS is deficient in the method of analyzing impacts to this site by expressing disturbance in terms of acres affected. (See, p. 4-11 and 4-13). Conservation biology, common sense, and a great deal of research points out that roads have a negative impact far beyond the area that is directly disturbed. Roads lead to habitat fragmentation, potentially introduce more humans into the area, introduce a different type of human user, and expand edge effect. (85)

RESPONSE: Page 4-11 of the DEIS addresses the effects on vegetation, how this relates to wildlife habitat is dealt with in the Wildlife section. It is correct that page 4-13 of the DEIS expresses disturbance in terms of acres affected but continuing on to the next couple of pages, the indirect and cumulative effects are discussed which include displacement of animals, increased potential for vehicle collisions with wildlife, etc. Also refer to comment #18 where fragmentation is specifically addressed.

7 COMMENT: A history of the NEPA compliance with lease issuance should have been included in the DEIS. The lease is nearly 20 years old (the normal term is 10 years) and an evaluation of this situation needs to be included to appropriately explain this out-of-the-ordinary situation. (85)

RESPONSE: NEPA compliance was completed prior to issuance of the lease which is documented in an Environmental Analysis Report dated June 16, 1972. The age of this lease is only out-of-the-ordinary when considered with the fact that most leases are never drilled on. Similar situations are not uncommon in many areas since drilling of a well near the end of the primary term of a lease will automatically extend the term of the lease, as well as when lands are included in or deleted from Unitized areas. All extensions/suspensions of the lease were granted in accordance with the Mineral Leasing Act of 1920 as amended and BLM policy. Approval was based on Categorical Exclusions as specified in the Department of Interior Department Manual. We do not see how the extended history of this lease is relevant to the decisions to be made beyond the existence of the lease and the rights it conveys.

8 COMMENT: The lease was issued during the RARE I process. What stipulations were required, given the RARE I study, on oil and gas leases and how does that affect the lease stipulations now? (85)

RESPONSE: The RARE I evaluation only analyzed areas for potential designation of Wilderness, it did not identify restrictions on other resource activities. No lease stipulations were attached to the lease relative to the RARE studies and therefore have no effect on the current lease.

9 COMMENT: The history of the leasing units are tied to the history of the lease issued in 1974, which contains the preferred drilling site. The history of the units which this lease has been a part of needs to be evaluated and presented in the DEIS. (85)

RESPONSE: The history of other exploratory units has no bearing on the decision to be made other than there is an existing lease which has been extended beyond the initial ten year term (see response to comment 7).

10 COMMENT: Oil and gas units are required to be established along geologic structures as per the regulations. Thus, lease development units are based on specific geologic criteria, which in turn is based on geologic assumptions. This lease, in order to have a lifetime of 19 years, must have been in several units where active production or drilling activity took place. The knowledge gained from drilling the dry exploration holes (such as Wolverine), the boundaries of the units should have been refined over the past several years. (85)

RESPONSE: The Unit area and obligation well were "designated" by the BLM on January 20, 1989 (see 43 CFR 3181.2). There are no regulations requiring that exploratory units be delineated solely on geologic structure. Unit boundaries may encompass multiple structures or structural trends, be varied to conform with lease boundaries or legal subdivisions, and normally the boundaries of an exploratory unit are much larger than the primary drilling target. The drilling of the other wells does not necessarily deplete interest in the area. The data obtained from those wells can be used to refine geologic interpretations and better understand geologic trends. The specific geologic analysis for the Table Top Unit Area is maintained as confidential information per 43 CFR 3162.8.

11 COMMENT: The Table Top unit is about 25,000 acres in size. This area should correspond with a geologic structure. However, all of the information presented at the public meetings indicate that the geological structure is at most a few hundred acres. If the unit is established based upon known geological information, then wouldn't it be logical to conclude that drilling would be appropriate on any part of the unit. Why would the previous dry well at Wolverine be included in this unit? (85, 95)

RESPONSE: Exploratory units are generally delineated much larger than the primary drilling target within the Unit. If production is established by drilling the primary target, information relative to the oil/water contact is gathered along with other reservoir characteristics. This information can help better define the productive limits, if any, of the structure. Drilling the initial well anywhere within the unit greatly increases the risk of being outside of those productive limits, and would likely require the drilling of additional wells to determine the potential of the structure.

12 COMMENT: CEQ has prescribed specific regulations to select third party contractors to insure that conflicts of interest are avoided. 40 CFR 1506.5(c) states, "It is the intent of these regulations that the contractor be chosen solely by the lead agency .... to avoid any conflict of interest." Yet, in a letter dated July 18, 1991 to Chevron Oil, the Forest Supervisor stated, "I am familiar with Dames and Moore consulting firm and their qualifications. I approve of your selection." It is clear the choice of a consultant was not made "solely" by the Forest Service. (85, 95)

RESPONSE: We agree that it was a poor use of words to portray our role in selecting the third party contractor to prepare the EIS. When Chevron first approached the Forest Service with their proposal we suggested the use of a contractor in order to meet their time frames and provided them a list of qualified consultants. In Chevron's letter dated July 10, 1991 it reads: "We propose to use Dames and Moore (Salt Lake City) to serve as third-party contractor to conduct the leasing analysis and EA/EIS for the well site". We wrote our letter of July 18, 1991 selecting Dames and Moore as the consultant. Chevron made a recommendation and the Forest Service made the selection. A list of the Statement of Qualifications is in the project record.

13 COMMENT: The DEIS does a poor job of analyzing whether this action is consistent with the Forest Plan. How will the standards be met to avoid development in more than one drainage at a time, as the Forest Plan FEIS indicated is important. (85)

RESPONSE: We assume the comment is directed towards the statement in Chapter IV, page 42 of the Forest Plan Final EIS: "Intense mineral activity should be avoided in adjacent drainages at the same time." We refer the reader to Chapter 1, Scope Of This Analysis section (Page 1-3). This analysis addresses the proposed action of drilling and producing an exploratory well and there are no other current mineral activities in adjacent drainages. Should this well result in a field discovery, an additional analysis would be completed at that time.

14 COMMENT: There is no discussion of the potential impacts to the adjacent High Uintas Wilderness. (27, 70, 85, 101)

RESPONSE: There was some discussion mixed in with the roadless, however, a new section has been added to Chapter 3 and Chapter 4 titled Wilderness (pgs. 3-21 & 4-24).

15 COMMENT: Will Chevron be required to drill the well within a specified time frame, and if so what is that period? (33)

RESPONSE: There are no specific drilling dates but once the lease suspension is lifted, Chevron will have 257 days, the time remaining on the lease, to meet their Unit obligations. The proposed drilling period is described in the introduction of Chapter 1 of the FEIS and states that activities would begin in July or August of 1994 depending upon date of approval. Figure 2-1 shows the proposed schedule for the various stages. Activities would begin in July or August (depending on weather conditions) so that there would be low water flows in the Main Fork during construction of the bridge which would help minimize impacts to water quality and to the adjacent riparian area.

16 COMMENT: What will happen to the Road and drilling site if no oil is discovered? (33)

RESPONSE: The well pad would be reclaimed. The amount of road and level to which it is reclaimed would depend on the road management alternative selected by the Forest Supervisor. These alternatives are described under the proposed action and "Road Management Alternatives" in Chapter 2 (pg. 2-21). You are referred to the Record of Decision for that decision and the rationale.

17 COMMENT: If oil is discovered, does Chevron have all the necessary permits to develop this reserve or will they be required? (33)

RESPONSE: This EIS only addresses the drilling and potential production of this one well. Should oil be discovered further NEPA analysis would be required prior to making any decisions related to further development of the reservoir. Chevron would need to obtain approval of any additional activities.

18 COMMENT: This analysis failed to recognize the importance of regional habitat fragmentation from the standpoint of landscape ecology and conservation biology principals. (42, 108)

RESPONSE: The Wildlife sections in Chapters 3 and 4 have been expanded to discuss fragmentation and biodiversity more fully.

19 COMMENT: While the actual surface area disrupted by the road and the drill site will amount to only a few acres, the entire Main Fork basin will feel the noise and vibration, the lights, the increased human presences, and the greater volume of traffic. (56)

RESPONSE: We agree that under the action alternatives the above short-term effects would occur as discussed in Chapter 4 under Land Use, Effects Common to all (Action) Alternatives.

20 COMMENT: The area may also be deleteriously affected by the toxicity of chemicals and drilling mud, the toxicity of chemicals used for the well development, and the toxicity of hydrogen sulfide gas which is often experienced, sometimes quite unexpectedly, during drilling on the North Slope. (56)

RESPONSE: Onshore Order No.2 identifies minimum casing requirements that must be followed to ensure protection of aquifers during drilling which is discussed in Chapter 2 under "Drilling and Completion" in the section "Conditions Common Among Action Alternatives (FEIS pg. 2-3). Although none of the other wells drilled in the general area have encountered hydrogen sulfide gas, precautions

will be taken. Onshore Order No.6 establishes requirements for safety equipment and materials that must be used at locations where hydrogen sulfide may be encountered. Should hydrogen sulfide gas be encountered or detected, the operator will be required to develop a contingency plan in accordance with Onshore Order 6. Additional text has been added in Chapter 4 under Air Quality.

21 COMMENT: Given the short growing season, total vegetation of the proposed drilling site, once it is abandoned, will take years. Total reforestation will not take place in your lifetime or in my lifetime and may never occur. (56)

RESPONSE: Once seedlings have become established, we can expect to see small trees four to five feet tall within 10 years and up to 12 to 13 feet in another 10. We expect it will take from 80 to 100 years for trees to reach their optimum height.

Its interesting to point out that most drainages on the North Slope of the Uinta Mountains were extensively logged in the late 1800's and early 1900's. Significant logging in the Main Fork, in particular, started in 1867 and continued through the 1870's (Case of B.F. Woods vs The Hillard Flume and Lumber Co. - District Files).

ALTERNATIVES

22 COMMENT: The DEIS rejects, or fails to consider, many important alternatives available to the Forest Service. The array or scope of alternatives must contain all reasonably available alternatives. The scoping process raised several potential alternatives to consider including: (1) helicopter access and (2) alternative sites outside the roadless area, but within the Table Top Unit. (35, 75, 85, 95)

The helicopter access alternative is viable and should have been considered in the DEIS. The DEIS failed to consider pertinent information in rejecting the helicopter access alternative. (26, 32, 35, 40, 42, 50, 51, 54, 58, 73, 75, 79, 85, 92, 95, 118, 120)

RESPONSE: An alternative that considered accessing the proposed drill site by helicopter was analyzed but was dropped from detailed evaluation in the DEIS. We have reviewed that section of the document and found that some pertinent information considered in the analysis was not fully disclosed in the DEIS. That section has been revised in the FEIS (pg. 2-12). See response to comment 23 for alternatives outside the roadless area.

23 COMMENT: The Table Top leasing/development Unit covers several square miles, much of which can be accessed from existing roads. Alternative drill sites outside the roadless area should have been considered to meet NEPA's mandate to analyze the alternatives which resolve conflicts. (40, 42, 50, 75, 79, 83, 84, 85, 120)

RESPONSE: An alternative that considered a well site outside of the inventoried roadless area was analyzed but eliminated from detailed study in the DEIS. We have reviewed that section of the document and found that some pertinent information considered in the analysis was not fully disclosed in the DEIS. That section has been expanded in the FEIS (pg. 2-11).

24 COMMENT: For the EIS to have validity, it must consider the no-action alternative as a substantive alternative to the proposed drilling project. The DEIS does not adequately describe the no-action alternative and its effects. (85, 95)

RESPONSE: Additional information has been incorporated into the document to more fully describe the No Action Alternative (pgs. 2-19 & 2-20).

25 COMMENTS: The discussion of the no-action alternative is inconsistent. The DEIS notes that the no-action alternative "would not constitute denial of exploration and possible development somewhere on the lease or within the unit." (DEIS p. 2-19). Then, a few sentences later, the DEIS notes that "leases within the unit do not prohibit all surface occupancy" and a denial would constitute "a 'taking'" of rights. (DEIS page 2-20) (85)

RESPONSE: Additional information has been incorporated into the document for clarification. The no-action would be to disapprove the Surface Use Plan for this particular well site at this time. The discussion related to the leases not precluding all surface occupancy was to fully disclose to the public that the no-action alternative does not necessarily mean that another well site on the lease would not be approved, or potentially a revised surface use plan for the same site.

26 COMMENT: The Forest Service oil and gas leasing regulations address this takings issue very differently than does the DEIS. "If there is a conflict between the rights conveyed by an oil and gas lease and a subsequently adopted forest land a (sic) resource management plan, the authorized Forest officer may choose to enforce that forest plan, recognizing that this may subject the government to appropriate legal action by the lessee, "clearly underscores the agency's ability to say no to an action on a lease, while recognizing potential consequences. (55 Fed. Reg. 10435, 1990) (85)

RESPONSE: The DEIS does not identify a potential 'taking' as part of the No Action Alternative since it does not preclude all activities on the lease (see response to comments 3 and 25). The legal discussion relative to a 'taking' is the "appropriate legal action" referenced in the comment if all activities on the lease were denied. Also, the above reference relates to a conflict between the rights conveyed by the lease and the Forest Plan, which does not exist for this proposal. It should also be noted that the above reference to the oil and gas leasing regulations actually refers to the preamble to the regulations and not the regulations themselves.

27 COMMENT: The DEIS notes that the no-action alternative would allow "erosion from vehicle ruts" to impact Hayden Fork and the Main Fork (DEIS p. 2-19, 2-21). Yet the travel plan clearly show that the area is closed to use by motor vehicles. The DEIS makes the mistake of assuming that the primitive jeep road is currently open to vehicle use, contrary to the Travel Plan. Given a prohibition on vehicle use, recovery of the vehicle ruts should eliminate or greatly diminish any erosion from vehicle ruts. (79, 85, 95)

RESPONSE: Although it is true that closing the road to vehicular traffic would help heal some of the ruts, there are places along the existing jeep trail which will require additional work to totally control the erosion which is occurring.

28 COMMENT: The description of impacts common to all alternatives clearly indicates that the no-action alternative was never really considered. Page 4-3 of the DEIS states: "Impacts Common to All

Alternatives: Potential impacts to soils would result from surface disturbing activities; primarily the well pad, road work, and gravel source." (85)

RESPONSE: In reviewing this comment we have found that the heading "Impacts Common to All Alternatives" is incorrectly stated, not only on the page referenced in the comment but through out Chapter 4. The heading should state, "Impacts Common to All Action Alternatives". This has been corrected in the FEIS.

29 COMMENT: The failure of the Forest Service to present a meaningful no-action alternative is partially a result of the inconsistent scope of this DEIS. On one hand, the DEIS describes the impacts of the proposed drilling too narrowly, limiting its discussion of impacts to Chevron's proposal to drill in a specific location. However, at the same time, the DEIS references the larger leasing unit and all U.S. domestic production. (See DEIS pp. 1-1, 1-2). (85)

RESPONSE: We have reviewed the referenced pages and do not find that the scope of the analysis to be inconsistent. There is a brief discussion of the Mineral Leasing Act of 1920 and dependence of foreign energy sources under the heading of Purpose and Need which is relevant within that section. The scope can be narrow while contributing to a broader purpose and need.

CUMULATIVE EFFECTS

30 COMMENT: The Table Top DEIS ignores the potential for future activity, claiming that "no reasonably foreseeable activities" exist beyond what is analyzed in the DEIS. The DEIS does not discuss the possibility of production or full field development. (34, 38, 40, 42, 46, 50, 54, 75, 79, 83, 85, 95, 98, 108, 115, 120)

RESPONSE: NEPA requires that reasonably foreseeable activities be considered in addressing cumulative affects. The following wording from 120 IBLA 235 should also help clarify this issue.

> "Any surface-disturbing operation beyond that authorized by the APD and its conditions of approval must be subject to BLM prior approval. Given this control, BLM need not prepare an environmental document analyzing the impacts of full field development at this time. Of particular importance to our decision is the nature of the action being contemplated. The permit being issued by BLM pursuant to the APD is temporary, it allows only the drilling of an exploratory well and related activities, all of which will cease by mid-September. Should this well prove to be a dry one, reclamation of this area will leave virtually no trace of its existence. Should this well prove to be a potential producing well, BLM will then be able to conduct further environmental review before any additional activities are authorized under this lease. ...."

The proposal involves an exploratory well, and based on historical success rates for exploratory wells, a large majority are non-productive. Therefore, it is not reasonable to foresee full field development at this time as discussed under "Scope of This Analysis" in Chapter 1 (pg. 1-3).

31 COMMENT: There is no discussion of the combined impacts of the proposed drilling site in conjunction with the Wolverine well. The Wolverine well is in the same RMU as the Chevron proposed drilling site (RMU 436). This proposed Chevron well can't be looked at as an independent action, because the proposed drill site location is based upon past exploration and seismic work undertaken in conjunction with the Wolverine Well and other drilling and seismic exploration. It is

deceptive to emphasize the fact that the current drill site location is based on past exploratory activity, and at the same time ignore the role that the past activity plays in the cumulative impacts of the Chevron proposal. (85, 91, 104, 118)

RESPONSE: It is true that the Wolverine well was within the same RMU as this proposed project, however it is still our opinion the Wolverine well need not be discussed from the stand point of combined impacts. The well was plugged and abandoned August 10, 1988 and the pad adapted into a campground/trailhead facility. There was a zero net gain in road density as a result of the Wolverine well.

It was not our intent to imply that the proposed well is based on past exploration and seismic work undertaken in conjunction with the Wolverine well. Competing companies maintain their data in confidentiality to the extent they can. Well logs become public information since they are required to be submitted to the State Oil & Gas Commission. Chevron likely used the well logs from the Wolverine well to correlate or refine their independently gathered data. The wording on page 1-1 under Purpose and Need has been revised for clarification.

32 COMMENT: There is already too much timber and grazing in the proposed lease site. Your EIS statement does not really deal with the cumulative effects of these past activities on the North Slope and within this area. (44, 46, 104, 117, 120)

RESPONSE: Timber activities around the project area, especially within the narrow confines of the Main Fork drainage, have been all but non existent since around the first of the century. Recent timber activity has been in the Peninsula area and was associated with fire wood and post/pole sales, however none of these activities have occurred within the past four to five years.

The project area is within the Stillwater Sheep Allotment, however, due to the dense timber and small open meadows, grazing pressure has not been heavy. Refer to Chapter 3 (pg. 3-25) and Chapter 4 (pg. 4-32) for discussion of Range.

33 COMMENT: The DEIS fails to consider the cumulative impact of the proposed (forest plan) Main Fork timber sale. The proposed road to the well site is connected to the proposed Main Fork timber sale, contrary to allegations in the DEIS. This sale would be very difficult to do without a road already in place as will be the situation given the decision of the preferred alternative to keep the road open after the well is drilled. (68, 75, 85,95)

RESPONSE: Connected actions as defined by CEQ regulations (CFR 1508.25) means that the actions are closely related and therefor should be discussed in the same impact statement. Actions are connected if they: (i) Automatically trigger other actions which may require environmental impact statements. (ii) Cannot or will not proceed unless other actions are taken previously or simultaneously. (iii) are independent parts of larger action and depend on the larger action for their justification. With current timber prices and demand increasing this timber sale could proceed on its own merits. The improved access would cause the timber sale to become more feasible and cost efficient. However, while we do not view this as a connected action, it does have the potential to be a reasonably foreseeable action within this drainage (a cumulative action) whose effects must be disclosed. Since at this point only general locations are known for the timber sale and no sale layout design has been initiated, effects can only be described within that limitation. Based on your comment the effects of the timber sale will be disclosed in Chapter 4 (pg. 4-35). It is appropriate to disclose the effects to the extent we can.

34 COMMENT: The North Slope Oil and Gas Leasing DEIS, which is forthcoming is expected to have a great deal to say about cumulative impacts of oil and gas development in the area. The information from that DEIS must be incorporated into the Table Top FEIS for it to have any real meaning. Until that time, the cumulative impacts section of the DEIS will lack the scope required by NEPA. (85)

RESPONSE: The proposed well could be considered one of the exploratory wells addressed in the various alternatives of the North Slope Leasing EIS, but as stated in response to comment 30, it is an exploratory well and as such the most reasonably foreseeable scenario is that it will be non-productive. Until a decision is made based on the North Slope Leasing analysis, it is unknown what alternative will be selected and the cumulative effects are different for the different alternatives.

The two EISs really deal with two very different aspects of oil and gas development on the National Forest. One deals with issuing leases with appropriate stipulations over a 270,000 acre area while this EIS is the actual site disturbing activity for one known location. This well is an exploratory well with no reasonably foreseeable development of future fields attached to it.

ROADS AND ROAD MANAGEMENT

35 COMMENT: The proposal includes road restoration improvement, relocation, and construction, for a total of 13.78 acres of disturbance, with 5.7 miles of that as a graveled roadway. This is a significant intrusion into relatively undeveloped area, and involves, riparian areas, wetlands, and important wildlife habitat. (75)

RESPONSE: We recognized the potential for significant impacts; this is one of the reasons for documenting the analysis in an Environmental Impact Statement instead of an Environmental Assessment. Chapter four discusses impacts to these resources.

36 COMMENT: The Forest Service refers to the Main Fork road work as "reconstruction" and "relocation", in actually it is simply 2 more miles of new road. The "new" Main Fork road is a new road; euphemisms such as "relocation" and "reconstruction" do not alter the fact. (75)

RESPONSE: You are right. These terms were used primarily to be consistent with Forest Service manuals. Regardless of what word is used, the effects of the impacts are still described.

37 COMMENT: The Main Fork road (Jeep Trail road) can be closed and reclaimed as was intended in the 1988 Travel Plan, the Table Top proposal is not needed as an excuse to implement the recommendations of the Travel Plan. (75)

RESPONSE: You are correct, if and when funds are available the Forest Service can close the road, however the Forest Service can take advantage of this situation to have Chevron construct physical barriers to control motorized travel.

38 COMMENT: Another set of EIS issues that are inadequately addressed deal with plans for road management in the event of an unsuccessful well. The post drilling road management should be fully examined now before the decision on road construction is made. (83)

RESPONSE: Refer to "Road Management Alternatives" sections in each resource discussion in Chapter four. These sections have been separated and are now a separate section, also the discussions have been expanded.

WILDLIFE

39 COMMENT: I strongly disagree that the displacement of big game populations will continue to occur after these activities cease and operations at the project site become normalized and predictable (assuming the well is productive). The presumption that wildlife species would or could be permanently displaced from the overall project area is conjectural at best and certainly is not founded on established scientific fact. In this regard, studies conducted by Hayden-Wing Associates on the "Response of Elk to Exxon's Field Development in the Riley Ridge Area of Western Wyoming 1979-1990" indicated that elk returned to winter and calving ranges after intensive oil field related activities (i.e., initial construction and drilling operations) ceased. The report conclude that "Levels of elk decrease near well drilling activities by elk return to former levels after disturbances are reduced to benign, localized and predictable levels." (23)

RESPONSE: Discussions in the Wildlife section of Chapter four does state that in some cases, after initial exposure, wildlife may habituate to the noise and human presence and begin to reinhabit areas formerly avoided. This section has been expanded to include information from the Riley Ridge study.

40 COMMENT: The DEIS fails to adequately consider the impacts to wildlife. Specifically, it fails to look at rare or sensitive species other than goshawks, or simply dismisses the presences. (DEIS p. 3-18). There is no discussion of lynx or great gray owl, and virtually nothing on the flammulated owl aside from the biological evaluation in the Appendix. The biological evaluation is insufficient because it fails to consider the lynx. (25, 27, 28, 38, 40, 42, 49, 70, 74, 75, 79, 85, 91, 95, 104, 108, 115)

RESPONSE: An "informal consultation" was conducted with the US Fish and Wildlife Service in relation to Threatened and Endangered Species. A copy of their letter is included in the Appendix.

Discussion of Sensitive Species can be found in Appendix I - Biological Assessment/Evaluation. In the interest of keeping duplication to a minimum, we did not bring forward all of the discussions from the BA/BE if the determination was that the proposed activity would not adversely effect the viability of the population for the specific species. Since goshawks were found in the project area and in surrounding areas, their analysis was expanded and described in more detail throughout the document. The BA/BE did include the lynx, great gray owl, and flammulated owl and other sensitive species.

41 COMMENT: Evaluation of the three-toed woodpecker and flammulated owls is limited to the immediate project area. This is a clear error resulting from the use of an improper survey error in making the analysis. (85)

RESPONSE: Recordings of the owl calls and the drumming of the woodpecker were used during the surveys. These playback calls are specifically used to try to locate individuals over a larger area than just that limited to the road or pad site. Since natural noises (wind, rain), topography, trees, etc., effect the distance the calls will travel, surveys were conducted only under still and clear conditions during nesting periods when the birds would be most apt to respond to the playback.

The survey methods used some of the techniques described in the established protocol for the South West Region since there haven't been protocol established for the Intermountain Region. Surveys were based on the anticipated risk associated with the project and species involved, and the level of knowledge already at hand (FSM 2673.43). Also refer to the BA/BE in Appendix I and to the US Fish and Wildlife Service letter in Appendix F.

42 COMMENT: The DEIS also fails to mention impacts to pine marten, which is an MIS according to the Forest Plan. (See p. II-32-33). The requirements for MIS found in 36 CFR 219 can't be met if no analysis is made of the impacts to MIS. (85)

RESPONSE: You are correct. The analysis has been expanded to include pine marten as a MIS (see pg. 3-19 and 4-17).

43 COMMENT: The DEIS recognizes that goshawks were found with the area (see Appendix I). However, nests for all the goshawks found during the survey were not found. Accordingly, the biological evaluation is lacking some critical information including a map showing the PFAs. (85)

RESPONSE: The nest for the goshawk within the project area was found and has been identified in District records. The BA/BE (Appendix I) includes mitigation measures to reduce impacts due to this project.

44 COMMENT: There conflicting statements regarding the sensitive species. For example, the determination that "since it appears there is a strong population of goshawks in the general area, the proposed action will not adversely affect the population" conflicts with the previous statement that "a moderate chance [exists] that the adults will abandon the nest to the proposed action." (85)

RESPONSE: It is our opinion that since there is a strong indication of goshawks throughout the general area, if one nesting pair were to abandon a nest the viability of the population would not be at risk. The difference is impacting an individual nest and not impacting the viable population. Mitigation measures have been included to minimize the chance that disturbance will cause nest abandonment.

45 COMMENT: Aquatic wildlife is also poorly addressed in the DEIS. For example, the Main Fork is considered a good stream in terms of some habitat requirements and water quality, though it does not have a lot of pool areas (holding water) due to gradient. This stream has a reasonable potential for the Bonneville cutthroat trout, but is "not documented" for any game species. This is a critical information gap, especially since Bonneville cutthroat have been relegated to small and swift streams like the Main Fork. (85)

RESPONSE: State fisheries biologists report no fish species of special concern (that is Bonneville cutthroat trout) but rainbow trout are stocked on a regular basis. Also, refer to the letter from the US Fish and Wildlife Service in Appendix F.

46 COMMENT: The DEIS states that impacts may occur to local wildlife populations, the document generally fails to quantify these impacts. As a result, this document is lacking based upon the lack of any population data for the project area, and the inference that these populations will be affected

to some indeterminate degree without attempting to quantify these impacts. How can you justify the inferences contained on page 4-14 without some sort of substantiation or quantification? (23)

RESPONSE: Please refer to revised text in Chapter 4 (pg. 4-15 through 4-19).

47 COMMENT: The DEIS also does a poor job of analyzing the impacts to game species from road densities. The RMU standards are not adequately addressed or met in the document. The Forest Plan (p. IV-101) requires a maximum open road density of .8 miles per square mile. However the DEIS does not indicate the miles of road to remain open in the RMU (436), The current density of these roads, or the intensity of use predicted for this route. (85)

RESPONSE: The density index was identified in the Forest Plan. If the density is kept within the index, we are not likely to see adverse impacts to wildlife from a road density point of view.

The text has been expanded (pg. 3-28) to better describe this issue.

48 COMMENT: The impacts on wildlife from death loss because of increased vehicle traffic are not addressed. The impacts of increased traffic from workers commuting from Evanston to the drill site, not just along the proposed Main Fork road, need to be considered. (85)

RESPONSE: This impact is discussed cn page 4-16 for access roads. Although Highway 150 is not specifically named, the discussions would also apply to it.

49 COMMENT: What kind of impacts would use on the road have, even with seasonal closures, on wildlife habit and the species which utilize the area over a twenty-to-thirty year period. What kind of displacement would occur during the summer and autumn months when the area would be utilized by recreation traffic. What kind of monitoring would be established to track the effects of increased human presence in the area on various species? (75)

RESPONSE: Please refer to Chapter 4 for a discussion on these impacts. Reference is made specifically to studies conducted on this subject. We will only monitor for species likely to be affected, refer to Appendix D for a summary of mitigation and monitoring.

50 COMMENT: It is unclear as to whether the impacts to population viability of sensitive species which would occur in the project area were considered in light of increased human access of simply identified in relation to initial road construction and use. (Appendix I) (75)

RESPONSE: Surveys were conducted for sensitive species likely to occur in the project area. We manage for population viability of a species. Increased human access into the area may temporarily or permenantly displace some individuals, but is not likely to result in a trend toward federal listing or a loss of viable populations of sensitive species. Refer to BA/BE, Appendix I, for more information on sensitive species.

51 COMMENT: Is the elk calving area really proximate to the proposed site. If it is indeed proximate I would like to see this issue addressed. (3)

RESPONSE: This area is not a known elk calving area.

52 COMMENT: Contrary to assumptions of the DEIS Chapter 4 (for Alternatives A and B) and the appended biological assessment, impacts to wildlife and habitat from most mineral activities are short-term and reclamation is highly successful. It has been repeatedly demonstrated by industry that oil and gas activities can be conducted without significant disturbance to elk, deer, and other wildlife species. Biological assessments and related discussions in the Final EIS should be based on updated scientific data which incorporates advanced technology and proven successes in wildlife/petroleum industry compatibility. (82)

RESPONSE: Chapter 4 (pg. 4-15 through 4-19) has been expanded as it relates to this comment.

WATER, HYDROLOGY, AND SOILS

53 COMMENT: Several questions with regard to water, soil, and hydrology raised in the DEIS are inadequately addressed. The question of meeting the Clean Water Act is met by a simple statement that, "Best Management Practices would be implemented so that water quality objectives are 'achieved'." (DEIS p. 4-7). The DEIS does not indicate what these best management practices are, or how much sediment is expected under the drilling scenario. How will the State's water quality requirements for this anti-degradation stream be met? The DEIS is silent on this issue. (85)

RESPONSE: Anti degradation requirements will be met by implementation of FSH 2509.22 (Soil and Water Conservation Handbook). The text has been expanded to include references. Also, no new point sources will be permitted by the State; BMPs will be applied to control the nonpoint sources.

54 COMMENT: The DEIS does not compare differences between this document and AMOCO;s proposal to drill a nearby site. That document contained several different types of information regarding sediment and water quality. (85)

RESPONSE: There is no longer an Amoco proposal. Amoco withdrew their proposal in 1986.

55 COMMENT: The DEIS is noticeably lacking in information about monitoring, mitigation, and follow up. NEPA requires more than insubstantial promises that impacts would be "to the extent possible . . minimized," that "construction . . would avoid disturbance," and that undefined "buffer" and sediment barriers" would be used. (DEIS p. 4-8). (85)

RESPONSE: Please refer to comment #52 as well as the Appendix (Authorizing Actions, APD and Surface Use Plan, Road Construction Criteria, Summary of Mitigation and Monitoring, Erosion Control and Reclamation, Wetland Delineation and Analysis Report and Forest Plan Standards and Guidelines).

56 COMMENT: Given the lack of detail, the DEIS cannot sufficiently analyze the environmental impacts of the proposed drill site on water quality and soils. Instead, the DEIS obscures important points that affect water quality, such as proposing a road which would cross a no-surface occupancy lease--stipulation which, incidently, were established because of unstable soils, among other reasons. (DEIS p. 2-18). (85)

RESPONSE: Road construction and design criteria as well as road location were all conducted and developed to mitigate effects to water quality. If during site specific analysis it is found that those reasons for which a restrictive stipulation is attached to a lease can be addressed, then a waiver, exception, or modification may be approved if operations can be conducted without causing unacceptable impacts, and that less restrictive stipulations will protect the public interest.

On a specific lease, stipulations are described down to the nearest 40 acre tract of land and the reasons for the stipulation described. Within that 40 acre tract there may be areas where the resource concern does not exist (ie. steep slopes or unstable soils). The intent of waivers, exceptions, and modifications is to allow for those situations to be addressed at the time an Application for Permit to Drill is submitted and the project specific analysis conducted. The resouce concerns that lead to the application of the No Surface Occupancy stipulation were considered in developing the road construction and design criteria. Based on this analysis those resource concerns can be met or avoided by the specific road location and construction standards.

57 COMMENT: Where is the analysis of water rights as it relates to the drilling operation? (85)

RESPONSE: The management of water rights falls under the authority of the State and Chevron must obtain a water use and appropriation permit from the Utah State Engineers Office. This requirement is identified in several places throughout the document; i.e., the water section on page 2-15, Table 3-2 on page 3-9, Figure 3-3, as well as Appendix A.

58 COMMENT: Where is the discussion of a worst-case scenario of impacts to ground water, as required by NEPA? The DEIS dismisses impacts to groundwater as an unimportant issue rather than honestly explaining that this kind of information is unavailable at this time. (85)

RESPONSE: NEPA does not require a "worst-case scenario". Contrary to the comment, we do not view the issue of groundwater as an unimportant issue. As stated on page 3-9 of the FEIS, there is limited groundwater data available, but the requirements of Onshore Order #2 ensure that freshwater aquifers are protected to the extent practicable. This is done through the casing and cementing program, and plugging procedures which is discussed under "Drilling and Completion" on page 2-8 of the FEIS. Water monitoring in and around existing oil and gas fields on the Mountain View District has shown no effect on groundwater, indicating that requirements of the Onshore Orders provide adequate mitigation. We do feel that impacts to the groundwater are adequately addressed.

59 COMMENT: The DEIS does not analyze how the requirements of the Section 404 permitting process will be met, nor how the loss of wetlands would be mitigated, as is required by law. The DEIS claims that wetlands would be restored on the old jeep trail. (85)

RESPONSE: Refer to Appendix A. The Army Corps of Engineers has verified that this proposal is authorized by Nationwide Permit Number 26. Also refer to page 4-10 and to Figure 5 in Appendix J.

60 COMMENT: With the exception of the wetlands delineation report, little substantive information is provided on the impacts from the proposed construction. Road design standards, erosion control, and reclamation guidelines are included in the DEIS, but the actual plan is not. (75)

RESPONSE: The actual plan will be developed using the decisions made in the Record of Decision.

61 COMMENT: The information provided does not show the slopes the road will cut across, the number of turnouts or widened curves, the grade, etc. (75)

RESPONSE: The maps showing alternative routes (Chapter 2) will give an indication of the side slopes involved. The road design criteria (Appendix C) describes turnouts, curve widening, and grades.

62 COMMENT: There is a lack of information on how commercial truck travel will affect erosion rates and slope failure. (75)

RESPONSE: Road design criteria takes in to account heavy truck traffic. This resulted in surfacing requirements, monitoring standards, design criteria, etc. to mitigate potential impacts.

63 COMMENTS: The Forest Service has no baseline data available on which to support its contention that it can adequately mitigate road-related impacts to surface waters. We cannot see how the Forest Service can reach any justifiable conclusions absent this information. (75)

RESPONSE: Experience is extensive for the Intermountain Region on which mitigation measures are based. The road design criteria described in this document have proven to mitigate road related impacts to surface waters. A monitoring program will be implemented to test whether standards are being met (Refer to Water Monitoring Program in Appendix).

64 COMMENT: There is no indication in the DEIS as to what measures (other than "appropriate action" would be taken should water quality degrade below State and Federal standards. This must be defined in the FEIS. (75)

RESPONSE: An immediate investigation to identify the source will occur. Measures will be taken to localize the source including shutting down drilling operations if necessary (Refer to Water Monitoring Program in Appendix).

65 COMMENT: The DEIS is not clear as to what level storm event the reserve pit on the well site is designed to meet; we recommend a 100 year storm event. (75)

RESPONSE: The reserve pit design is not based on a certain storm event. The design and construction of the pad will divert any flowing water from rain or snowmelt away from the well site. Therefore, the only water in the pit will be that which is needed for the drilling of the well or from precipitation falling directly into the pit. If for one reason or another the water level in the pit gets too high, water will be pumped out and hauled by truck to an approved disposal site. Extra volume (free board) is considered in the design of the pit.

66 COMMENT: What are the Forest service requirements for construction near riparian areas? Will these be met in the road design plan? (75)

RESPONSE: These can be found in Section IV, page 32-33 in the Forest Plan. Road construction criteria (Appendix C) require the referenced standards be met.

67 COMMENT: The Appendix on wetlands provides options for avoidance and mitigation of road impacts to wetlands, but does not contain definitive decisions on mitigation methods and their probable success. We are unclear as to why final road design has not yet been submitted to the Forest Service and Army Corps of Engineers to determine if the assumptions of success in the DEIS will prove workable in the actual plan. (75)

RESPONSE: The specific road construction criteria in Appendix C, page 6, specifically address wetland crossings and are required to be included in the final road design. The Army Corps of Engineers have been consulted and agree with the criteria (Nationwide Wide Permit No. 26 issued March 8, 1993).

WILD AND SCENIC RIVERS

68 COMMENT: The DEIS does not meet the requirements of the Wild & Scenic Rivers Act (WSRA) or Forest Service regulations. Forest Service planning regulations require that all rivers be analyzed for their eligibility and suitability for protection under the WSRA. Since the eligibility determination was not made in the Wasatch-Cache National Forest Plan, it must be made at the project level (Forest Service Manual 1924). (85)

RESPONSE: Eligibility determinations have just been conducted for the revision of the Forest Plan. Please refer to Wild and Scenic Rivers discussion in Chapter 3.

OLD GROWTH

69 COMMENT: The change in old growth is not "insignificant" as stated in the DEIS. There is no analysis of the impacts of changing the location of the old growth stand to a steeper and less productive area or the impact of fragmenting this intact forest (see figure 3-5). (75, 85, 95)

RESPONSE: The proper term in reference to a Forest Plan amendment is nonsignificant. This has been changed in the document. A nonsignificant amendment refers to a change in the Forest Plan that does not significantly alter the multiple use goals and objectives for long term land and resource management. Shifting the boundary of the designated old growth stand would result in this type of minor change. It is important to distinguish between the significance of a change to the Forest Plan and the significance of the environmental impacts. Changing the old growth boundary will not cause any significant effects but rather improve the effectiveness of the designated old growth stand. Also the text (pg. 3-14) has been expanded to more fully describe this issue.

ROADLESS AREA AND PRIMITIVE RECREATION

70 COMMENT: The DEIS is incorrect in identification of the actual roadless area. The actual roadless area boundary is larger than that shown in the DEIS. The RARE II map shows a different boundary. The entire Main Fork is roadless and meets the minimum definition of wilderness qualifying/roadless lands needing an EIS. This includes the portion where the jeep trail is found because the area is ostensibly closed to vehicle use. (See Wyoming Outdoor Council v. Butz). (75, 79, 85)

RESPONSE: Refer to expanded discussion in Chapter 3 on the Roadless Resource.

71 COMMENT: The Forest Service has incorrectly identified the current situation regarding Semi-Primitive Non-Motorized and Semi-Primitive Motorized recreation in the DEIS. (See DEIS p. 2-18). The reason for this is related to the jeep trail which was closed in the Travel Plan. (85)

RESPONSE: NEPA requires an analysis of effects on the existing environment or situation. Semi-primitive motorized recreation is occurring whether consistent with the travel plan or not, and therefore is the existing situation as described in Chapter 3 (pg. 3-25).

72 COMMENT: The no-surface occupancy stipulation was "waived" for the road, in part, based upon the erroneous conclusion that the area contains no high value recreation areas. (75, 85)

RESPONSE: In Chapter 2 (Road Management, pg. 2-17) there is a description of why the modification of the stipulation was applied for. There is a definition of "high recreation values" as used for determining stipulations. The issue is whether the area meets the definition or criteria contained in the Forest Plan and as stated in the stipulation.

73 COMMENT: The DEIS also entirely misconstrues the value of the roadless/wilderness experience. Page 2-18 implies that easier access to Hell Hole Lake would make a better wilderness experience. This is entirely false and contradicts the reasons for wilderness. (85)

RESPONSE: The statement referred to in the comment does not say it will make a better wilderness experience. It only states that access to that portion of the High Uintas Wilderness would be made easier.

74 COMMENT: While they have every right to explore for oil on this lease, doesn't the Forest Service have the responsibility of insuring adherence to the roadless designation? (58)

RESPONSE: There is no such official designation for roadless areas, rather roadless area refers to a resource inventory. Under the Utah Wilderness Act all roadless areas were released to multiple use management. While we are not required to maintain these areas as roadless we may choose to do so to maintain the values and characteristics associated with an area being unroaded. In the event a site disturbing activity is proposed within the current roadless inventory the effects on the roadless characteristics must be evaluated. That analysis has been improved in the FEIS on page 4-25.

CULTURAL RESOURCES

75 COMMENT: The DEIS proposes an alternative which negatively affects the Howe Flume historical district. Yet, the impacts and mitigation of potential impacts have not been identified. Consultation with the Utah State Historic Preservation Officer has not occurred. (DEIS p. 4-34). The DEIS fails NEPA and Forest Service regulations regarding adequacy of analysis during the review stage. (75, 85)

RESPONSE: Consultations regarding the potential impacts of the Table Top Prospect on cultural resources have been completed with the Utah State Historic Preservation Officer in accordance with Section 106 of the National Historic Preservation Act. A Memorandum of Agreement has been signed by the Advisory Council on Historic Preservation, Forest Service, and Utah State Historic Preservation

Office. Stipulations agreed to in that Memorandum of Agreement are listed in Chapter 4, Cultural Resources, Mitigation.

VISUAL RESOURCES

76 COMMENT: There is considerable confusion in the DEIS about visual resources. How can visual resource objectives in the Forest Plan be met when this drill rig would be visible from the Mirror Lake highway near the Bear River Ranger Station? (85)

RESPONSE: As seen from the highway, the drill rig would be 4 to 5 miles distance and clearly in the background. As such, the drill rig would not dominate the landscape. Also, the drill rig is temporary; within one year the rig would be taken down. Both of these considered, a VQO of Partial Retention would be easily met, however, the location is actually in an area designated by the Forest Plan to be managed for a VQO of Modification which is less restrictive than the inventoried Partial Retention. There is no problem meeting Forest Plan direction for this issue.

Department of Community & Economic Development
Division of State History
Utah State Historical Society

Norman H. Bangerter
Governor
Max J. Evans
Director

300 Rio Grande
Salt Lake City, Utah 84101-1182
(801) 533-5755
FAX (801) 364 6436

December 21, 1992

Stephen M. Ryberg
District Ranger
Wasatch-Cache National Forest
P. O. Box 1880
1565 Highway 150 S., Suite A
Evanston, Wyoming 82930

RE: DEIS - Exploration Oil Well Chevron Table Top Prospect

In Reply Please Refer to Case No. 91-1105

Dear Mr. Ryberg:

The Utah State Historic Preservation Office received the above referenced draft EIS on December 16, 1992. The Utah Preservation Office has the following comments for your consideration.

1. In part 3 starting on pg 35, there is a detailed description of cultural resource law, I believe that a shorter summary could be used here with a chart to describe the process.

2. On page 3-37 there is an overview of cultural history of the project area, it is well written, but for a EIS, it could be shortened with the outline of culture history in an appendix or a reference.

3. The idea of putting a pamphlet together on the area is great, I believe that could be a key part of the mitigation plan for the area.

4. 4-31, the sites are probably eligible under other criteria than d, therefore I would recommend a determination of Adverse Effect for the project.

This information is provided on request to assist the Forest Service with its Section 106 responsibilities as specified in 36CFR800. If you have questions or need additional assistance, please contact me at (801) 533-3555. Please note, our new fax number is 533-3503.

Sincerely,

James L. Dykman
Compliance Coordinator

JLD:91-1105 FS/EIS

Board of State History: Douglas D. Alder • Marilyn C. Barker • Dale L. Berge • Boyd A. Blackner
Hugh C. Garner • Peter L. Goss • David D. Hansen • Dean L. May • Ams Allen Price • Penny Sampinos • Sherry Wyhe

RESPONSE: Thank you for your comments. We have reviewed the document and made changes as appropriate. Additional mitigation has been developed to protect the cultural resources in an Memorandum of Agreement which has been subsequently signed by the Division of State History, Forest Service, and Advisory Council on Historic Preservation

LETTER #2

State of Utah
DEPARTMENT OF COMMUNITY
AND ECONOMIC DEVELOPMENT

MICHAEL O LEAVITT
Governor
JOSEPH A JENKINS
Executive Director

January 6, 1993

United States Forest Service
Salt Lake City, Utah

Re: Chevron U.S.A. - Proposed Drilling of Table Top Well, Summit County, Utah

Dear Sir:

We understand that Chevron U.S.A., there having been completed a draft Environmental Impact Statement for the Table Top Exploratory Well, is seeking permission to go forward with the drilling of a well in Summit County, Utah in the Wasatch/Cache National Forest. We understand that there is a meeting scheduled for Thursday, January 7, 1993 beginning at 4:00 p.m. on this matter.

We believe that this project, if successful, could lead to a major oil and gas discovery. It could, ultimately, generate significant economic benefits to Summit County and to the state of Utah. It would contribute to the self-sufficiency of domestic production, particularly, for the greater Salt Lake area.

We understand also that Chevron U.S.A. has a fine record for sound and responsible environmental practices and that the activity in question would not have adverse environmental impact, weighing all considerations.

We strongly urge that favorable consideration be given to this proposed project.

Sincerely yours,

Joseph A. Jenkins

State of Utah
Department of Economic Development

By: _____

Copy to: Leonard J. Lewis, Esq.
Van Cott, Bagley, Cornwall & McCarthy

W.J. Maguire, The Chevron Companies

RESPONSE: Thank you for your comments.

LETTER #9

WYOMING
GAME AND FISH DEPARTMENT

Mike Sullivan, Governor — Francis E. Peters, Director

January 21, 1993

EIS 6576
U.S. Department of Agriculture
Forest Service
Wasatch-Cache National Forest
Evanston Ranger District
Draft Environmental Impact
Statement (DEIS)
Chevron Table Top Prospect

STEPHEN M. RYBERG
DISTRICT RANGER
WASATCH-CACHE NATIONAL FOREST
EVANSTON RANGER DISTRICT
P.O. BOX 1880
EVANSTON, WY 82931-1880

Dear Mr. Ryberg:

The staff of the Wyoming Game and Fish Department has reviewed the draft environmental impact statement for the Chevron Table Top Prospect project on the Wasatch-Cache National Forest. We have no concerns with this project as proposed.

Thank you for the opportunity to comment.

Sincerely,

Tom Collins

Thomas C. Collins
Environmental Coordinator
Office of Director
Environmental Services

EVANSTON R.D.
JAN 25 '93

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RANGER		
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SALV		
NEPA		
SALE PREP		
SALE ADM		

TC:as
cc: Game Division
Fish Division
HATS Division
USF&WS
SFC

Headquarters: 5400 Bishop Boulevard, Cheyenne, Wyoming 82006

RESPONSE: Thank you for your comments.

LETTER #21

United States Department of the Interior

TAKE PRIDE IN AMERICA

OFFICE OF THE SECRETARY
OFFICE OF ENVIRONMENTAL AFFAIRS
DENVER FEDERAL CENTER, BUILDING 56, ROOM 1018
P O BOX 25007 (D-108)
DENVER, COLORADO 80225-0007

ER 92/1198

JAN 27 1993

Mr. Stephen M. Ryberg
District Ranger
Evanston Ranger District
Evanston, Wyoming 82931-1880

Dear Mr. Ryberg:

The Department of the Interior reviewed the Draft Environmental Impact Statement for the Chevron Table Top Prospect Exploratory Oil Well, Wasatch-Cache National Forest, Summit County, Utah, and has no comments.

Sincerely,

Robert F. Stewart
Regional Environmental Officer

EVANSTON R.D.

FEB - 1 '93

	ACT	INFO
RANGER	✓	✓C
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SOS	✓	
COMPLIANCE		
SCSEP		
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NEPA		
SALE PREP		
SALE ADM		

RESPONSE: Thank you for your response.

LETTER #22

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEERS
1325 J STREET
SACRAMENTO, CALIFORNIA 95814-2922

REPLY TO
ATTENTION OF

February 5, 1993

Utah Regulatory Office (NW-14) (9250025)

Bernard Asay
Evanston Ranger District
Wasatch-Cache National Forest
1536 Highway 150, Suite A
Evanston, Wyoming 82930

Mr. Asay:

Reference is made to the Chevron Table Top Exploratory Oil Well Draft Environmental Impact Statement (DEIS) dated December 1992. This letter constitutes the response of the U.S. Army Corps of Engineers.

The project has been reviewed in accordance with Section 404 of the Clean Water Act under which the U.S. Army Corps of Engineers regulates the discharge of dredged and fill material into waters of the United States including wetlands. Based on the information provided it appears that the road to the proposed oil well would involve such discharges.

This project may qualify for a nationwide permit for minor road crossings provided the following conditions are met:

1. The width of the fill is the minimum necessary for the actual crossing.

2. The fill placed in wetlands is limited to a filled area of no more than 1/3 acre and does not exceed 200 linear feet in length.

3. The crossing is culverted or otherwise designed to maintain existing surface and subsurface flows.

4. The permittee notifies this office in accordance with the notification procedure as attached.

RESPONSE: Thank you for your assistance. As of this date, Chevron has obtained the necessary 404 permit.

LETTER #36

If you have any questions please contact Ms. Katherine Trott of our Utah Regulatory Office, 1403 South 600 West, Suite A, Bountiful, Utah 84010, telephone (801) 295-8380.

Sincerely,

Brooks Carter
Chief, Utah Regulatory Office

Enclosure

Copy furnished:

Mr. Harold Perry, Chevron U.S.A., Inc., Post Office Box 6004, Evanston, Wyoming, 82931-6004

Wyoming State Legislature

213 State [illegible] Cheyenne, Wyoming 82002 · Telephone [illegible]

February 15, 1993
EIS for Table Top Prospect
Exploratory Oil Well Project

House of Representatives

REPRESENTATIVE GORDON L. PARK
House District 49 - Uinta County
212 Toponce Avenue
Evanston, Wyoming 82930

Committees
Revenue
Minerals, Business & Economic Development

Susan Giannettino
Forest Supervisor
Wasatch-Cache National Forest
8230 Federal Building
125 South State Street
Salt Lake City, Ut. 84138

Stephen M. Ryberg
District Ranger
Wasatch-Cache National Forest
1565 Hwy. 150, Suite A
Evanston, Wy. 82930

Dear Susan and Steve:

I am very encouraged by the cooperative spirit and objectivity displayed by the Forest Service and the Oil and Gas Industry on the subject project. Early Definition and the establishment of goals and objectives can set an agenda for success. I believe this EIS is a process model for such success. I would hope that it could be used in the future to result in equally successful outcomes.

The North Slope of the Uintah Mountains and the Bridger-Teton range are considered to be some of the most prospective areas left for Oil and Gas exploration in Wyoming. These are important areas for the Oil and Gas Industry as well as for other commodity users. Our local businesses, schools and local governments are dependent on the viability of the grazing, timbering, Mining and Oil and Gas Industries. It is for this reason that I encourage your favorable consideration for the Table Top EIS and all future responsible commodity user proposals.

Gordon L. Park
Wyoming House of Representatives
District 49

cc: Governor Sullivan
Legislative Members
U. S. Congressional Delegation
Uinta County Commissioners
Mayor Dennis Ottley
Evanston School District No. 1
Evanston Chamber of Commerce

EVANSTON R.D.

FEB 18 '93

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RESPONSE: Thank you for your comments.

LETTER #76

(86)

United States Department of the Interior

FISH AND WILDLIFE SERVICE
FISH AND WILDLIFE ENHANCEMENT
UTAH STATE OFFICE
2078 ADMINISTRATION BUILDING
1745 WEST 1700 SOUTH
SALT LAKE CITY, UTAH 84104-5110

TAKE PRIDE IN AMERICA

In Reply Refer To

(ES) February 19, 1993

Bernard Asay
Evanston Ranger District
Wasatch-Cache National Forest
U.S.D.A. Forest Service
P.O. Box 1880
Evanston, Wyoming 82931-1880

Dear Mr. Asay:

The U.S. Fish and Wildlife Service (Service) received on December 16, 1992 a Draft Environmental Impact Statement (DEIS) for potential effects of an exploratory oil well, Chevron Table Top Prospect, oil and gas lease U-24446, on lands administered by the Wasatch-Cache National Forest (Forest) in Summit County, Utah. The Service has reviewed the DEIS and has the following comments. Overall, the document is well-organized and easy to read, and provides a good analysis of the proposed action.

Please note that Service comments have been limited to the following sections:

Pages	Section
3-13 to 3-16	Affected Environment: Vegetation (specifically Threatened, Endangered, and Sensitive Plant Species)
3-16 to 3-19	Affected Environment: Wildlife
3-19 to 3-20	Affected Environment: Fisheries
4-9 to 4-12	Environmental Consequences: Vegetation (specifically Threatened, Endangered, and Sensitive Plant Species)
4-12 to 4-17	Environmental Consequences: Wildlife
4-17 to 4-18	Environmental Consequences: Fisherics

EVANSTON R.D.

MAR 04 '93

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EPA		
SALT LAKE		

Chapter 3. Affected Environment: Vegetation

On page 3-15, reference is made to "Ute (hooded) ladiestresses." The Service uses the common name "Ute ladies'-tresses," and the scientific name is correctly spelled.

All spelling and wording changes have been made to the FEIS.

LETTER #86

Spiranthes diluvialis (while it is spelled correctly in Table 3-3, it is spelled incorrectly in the text.)

Additionally, *S. diluvialis* is referred to as a "threshold species." The Service is unfamiliar with this classification, but adds that *S. diluvialis* is a species federally listed as threatened.

"Threshold species" has been changed to reflect that the species referred to is a federally listed as threatened.

Chapter 3. Affected Environment: Wildlife

On page 3-16, second paragraph, "dominate forest feature" should read "dominant forest feature."

The sentence, "All wild birds except starlings and house sparrows are protected by the Migratory Bird Treaty Act of 1986," is not completely correct. The sentence should read, "All migratory wild birds except European starlings, house sparrows, and rock doves are protected by the Migratory Bird Treaty Act of 1986."

The common name "ruby-crowned kinglet" is hyphenated.

On page 3-18, please include results of the June 1992 presence-or-absence survey conducted for northern goshawk. The survey was mentioned, but no further information was provided on this page. Although information is provided later in the document (page 4-12), it would be useful to have a brief statement about the finding in this section.

A brief statement of this survey has been added to this section.

Chapter 3. Affected Environment: Fisheries

On page 3-20, it is stated that Bonneville cutthroat trout (*Oncorhynchus clarki utah*) "are rated by the FWS as 'sensitive.'" This is a false statement, as the Service has no "sensitive" rating designation. However, it is correctly stated later that the species is a candidate species for listing as threatened or endangered. Also, as was done for other species, please include the scientific name for Bonneville cutthroat trout in this section of the DEIS.

The statement has been corrected to state "are rated by the Forest Service as 'sensitive'." The scientific name has also been added for Bonneville cutthroat trout.

Chapter 4. Environmental Consequences: Wildlife

On page 4-12, it is mentioned that an active northern goshawk nest was found in June 1992. While the location is described in the text of the Biological Assessment/Evaluation (Appendix I), no map is included. Please include in the DEIS a map of the nest location relative to the proposed project area. Additionally, any other goshawk nests and/or sightings within the area of influence of the proposed project should also be included on the map.

To maintain confidentiality of the nest location we have not included a map in the document, one is available in the Ranger District project files.

In the DEIS, please document the basis for using a *645-foot* radius for a zone of no construction around an active northern goshawk nest, as nest areas have been identified to be approximately 30 acres (Appendix I). Also, a definition of

The area of a circle with a 645 foot radius is 30 acres. We used the nest as the pivot point lacking a better way of identifying the 30 acre nesting area.

"construction" in this context is needed (i.e., a statement of exactly what activities will be disallowed during that time).

The Service appreciates the opportunity to comment on the DEIS. If further assistance is needed, please advise. The Service representative who will provide technical assistance is Marilet A. Zablan, Wildlife Biologist, at (801) 975-3630.

Sincerely,

Robert D. Williams
State Supervisor

Wording has been added to help define "construction". In this case it encompasses anything involving earth moving or clearing of vegetation. Driving or transporting equipment through this area is not involved.

(97)

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Salt Lake District Office
2370 South 2300 West
Salt Lake City, Utah 84119

TAKE PRIDE IN AMERICA

IN REPLY REFER TO

3160
O&G 8901
U-54044
(UT-026)

FEB 23 1993

Mr. Stephen M. Ryberg
District Ranger
Wasatch-Cache National Forest
Evanston Ranger District
P.O. Box 1880
Evanston, Wyoming 82931-1880

Dear Steve:

Dan Washington of my staff and George Diwachak and Al McKee of the Utah State Office, BLM have reviewed the Draft Environmental Impact Statement (DEIS) that was recently completed for the Chevron Federal 1-16 Table Top Prospect. A copy of the DEIS was sent to the Department of Interior, Office of Environmental Affairs for their review. The OEA had no comments and felt the document was adequate. The following are our comments referenced by your page numbers of the review:

1. pp. 2-3, Schedule. The schedule presented does not coincide with recommendations for protection of goshawks.

2. pp. 2-7, Well Site. This section contains no provisions for diverting runoff water from the surrounding area around the pad. Provisions of EPA Storm Water Discharge regulations dictate that runoff be diverted from the site and runoff from the site be prevented from escape.

3. pp. 2-8, Paragraph 1. For proper waste minimization, runoff water from the pad should be collected in a separate pit. Although many materials intrinsic to oil and gas exploration including drilling fluids are exempt from RCRA Subtitle C regulations, several substances (e.g., spilled solvents) are not. Routing surface runoff from the pad to the reserve pit could invoke the "mixing rule" of RCRA and the entire reserve pit contents could become non-exempt.

EVANSTON R.D.
FEB 24 '93

RESPONSE: 1. The goshawk nest only involves a relatively short section of existing road. Construction activities may occur elsewhere in the project area while activities are restricted in the nesting area.

2 & 3. The text has been expanded in reference to this comment.

LETTER #97

4. pp. 2-9, Paragraph 2, Development for Oil. All gas associated with oil production is not flared as implied here. Gas in commercial quantities must be produced and sold. Suggest provisions for gas production be included.

5. pp. 2-9, Paragraphs 4 - 6, Reclamation. There should be some provisions for pit closure if the liquids do not evaporate. What are plans for pit liner during reclamation? Will it be removed or buried? Without prior chemical analysis, BLM does not approve subsurface disposal of drilling fluids. Suggest other options be included.

6. pp. 2-11, Paragraphs 1 - 3. Chevron's APD Drilling Plan contains no mention of potential for encountering hydrogen sulfide gas. Onshore Oil and Gas Order No. 6 requires a Public Protection Plan and Drilling Plan for certain H_2S situations. Also, impact analysis of potential for hydrogen sulfide is not mentioned in any section of Chapter 4.

7. pp. 2-20, Paragraph 1. To avoid conflicting with a recent Montana District Court Decision (even though this project proposal is out of this jurisdictional boundary). Change the words "Congressional action" to "Canceling the lease" at the beginning of line 3, and place a period after "require due compensation." and delete "and appropriation of funds by Congress."

8. pp. 3-1, Geology. The stratigraphy presented in this section is completely different from that included in Chevron's APD Drilling Plan. Suggest some conformance. Does this difference have any bearing on the casing and cementing program of the APD?

9. pp. 4-6, Ground Water. With the differences between the EIS (Chapter 3, Geology) and the APD Drilling Plan, the statement in this section that the casing and cementing program have been designed to protect ground water aquifers is not exactly justifiable. Ditto for the mitigation portion of this Water Resources section.

10. pp. Appendix A, pp. A-2. Suggest that Onshore Oil and Gas Order No. 6 be added.

If you have any questions pertaining to the BLM's review of the DEIS, please feel free to contact Dan Washington of my staff at (801) 977-4300.

Sincerely,

Leon E. Berggren
Bear River Resource Area Manager

cc: Hunsaker, Dames & Moore
McDaniel, Chevron Production

4. Text has been expanded to reflect comment.

5. Text has been expanded to reflect comment.

6. Please refer to response to general comment #20.

7. Corrections have been made.

8 & 9. The stratigraphy listed in Chapter 3 is the "typical or normal" sequence of formations listed by age – oldest to youngest. At the Table Top Prospect, the formations do not occur in normal order due to the thrust faulting. The drilling plan addresses the sequence in which they occur. The casing program was based on the drilling plan so it should be fully adequate to protect potential groundwater aquifers. Any formation below the proposed surface casing depth has contained saline water in other wells drilled in the area.

10. Text has been expanded to reflect comment.

State of Utah
DEPARTMENT OF NATURAL RESOURCES

Norman H. Bangerter, Governor
Dee C. Hansen, Executive Director
Joel Tuhy, Coordinator

Utah Natural Heritage Program
1636 West North Temple, Suite 316
Salt Lake City, Utah 84116-3193
801-538-7200
801-538-7315 (Fax)

EVANSTON R.D.

FEB 23 '93

	ACT	INFO
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SILV		
NEPA		
SALE PREP		
SALE ADM		

17 February 1993

Stephen M. Ryberg
Wasateh-Cache National Forest
Evanston Ranger Distriet
P.O. Box 1880
Evanston, Wyoming 82931-1880

RE: Comments on Chevron Table Top Prospect Exploratory Oil Well -- Draft Environmental Impaet Statement

Dear Mr. Ryberg:

Our comments on the Draft EIS are limited to the text seetion on "Threatened, Endangered, and Sensitive Plant Speeies" (p. 3-15) and the Table 3-3 entitled "Sensitive Plant Speeies" (p. 3-16).

The doeument refers to the faet that the Uinta beardtongue (*Penstemon uintahensis*) and the brownie ladyslipper (*Cypripedium fasciculatum*) are the most likely sensitive plant speeies to oeeur in habitats of the projeet area. The doeument also mentions that surveys were eondueted to determine whether or not the brownie ladyslipper is present in the projeet area. However, there is no mention of any similar field survey work for the Uinta beardtongue. If the surveys eompleted in July of 1992 were to seareh for both of these speeies, then this should be stated. If no surveys have been done for Uinta beardtongue, then these should be eompleted in July of 1993 and prior to any ground disturbanee.

The doeument refers to the Ute ladies'-tresses (*Spiranthes diluvialis*) as "a threshold speeies." What does this mean? Or perhaps the author meant to state that it is a threatened speeies, which is in faet the ease [see Federal Register 57(12): 2048-2054, dated 27 January 1992].

Several errors appear in Table 3-3. For one, "hooded ladies'-tresses" is not the eorreet common name for *Spiranthes diluvialis*. The aeeepted common name for this threatened orehid is "Ute ladies'-tresses."

RESPONSE: Thank you for your comments and your suggestions/correction have been incorporated into the FEIS.

LETTER #99

Second, there are numerous errors in the column entitled "Classification" and in the footnoted definitions of the status codes that were used. We suggest that the information presented here would be much clearer if broken out into three different columns according to the responsible agency, as follows:

	Agency Status		
Species	Utah Natural Heritage Program[1]	U.S. Fish and Wildlife Service[2]	Wasatch-Cache Nat'l. Forest
Uinta beardtongue (*Penstemon uintahensis*)	G3/S3	3C	Sensitive
Uinta parrya (*Parrya rydbergii*)	G2Q/S2	None	Sensitive
Arctic poppy (*Papaver radicatum* var. *pygmaeum*)	G5T1/S1	None	Sensitive
Brownie ladyslipper (*Cypripedium fasciculatum*)	G3/S1	None	Sensitive
Ute ladies'-tresses (*Spiranthes diluvialis*)	G2/S1	LT	None[3]

Notes:

[1] The global rank (G-rank) is a reflection of the overall condition of a species throughout its range

G1 = critically imperiled globally; endangered throughout range.
G2 = imperiled globally; endangered throughout range.
G3 = either restricted in range or very rare and local throughout its range; threatened throughout range.
G4 = apparently secure globally, though may be rare in parts of its range.
G5 = demonstrably secure globally, though may be rare in parts of its range.

Subspecies and varieties receive a T-rank attached to the G-rank, in which case the G-rank reflects the condition of the entire species and the T-rank reflects the global situation of the subspecies or variety

The state rank (S-rank) is assigned in much the same way as the global rank but reflects only the status of the species as it occurs in Utah.

[2] 3C = no longer under review (more abundant than previously believed and/or not subject to any identifiable threat).

LT = listed as a Threatened species under the Endangered Species Act of 1973, as amended

[3] Not presently known to occur on the Wasatch-Cache National Forest

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
999 18th STREET - SUITE 500
DENVER, COLORADO 80202-2466

EVANSTON R.D.

FEB 23 '93

FEB 19 1993

RANGER		
REC		
WLDLIFE		
SILV		
NEPA		

Ref: 8WM-EA

U.S. Forest Service
Wasatch-Cache National Forest
Evanston Ranger District
Attn: Stephen Ryberg, District Ranger
P.O. Box 1880
Evanston, WY 82931-1880

Re: Draft Environmental Impact Statement for the Chevron Table Top Prospect - Exploratory Well, Utah

Dear Mr. Ryberg:

In accordance with our responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, the Region VIII office of the Environmental Protection Agency (EPA) has reviewed the subject Draft Environmental Impact Statement (DEIS) issued by the Wasatch-Cache National Forest. We offer the following comments for your consideration in preparing the Final EIS.

EPA appreciated the field inspection and meetings with the Forest Service on September 30 - October 1, 1991. At that time, in addition to our primary discussions regarding the East Fork Blacks Fork EIS, the Forest Service briefed us on the proposed Table Top prospect. During our discussions and in the scoping comments letter submitted for the Table Top Prospect analysis (October 10, 1991), the EPA stressed the importance of establishing baseline resource conditions, particularly for site-specific analyses, such as the subject EIS. We believe that, without such information, analytical assessments of potential project impacts cannot be adequately performed.

Based on our review of the DEIS, we note that water quality data was not available for the project area at the time of this analysis (page 3-11). Although we are encouraged that Chevron has committed to conducting a water quality monitoring program, we are concerned that baseline information was not made available for the Draft EIS. At this stage, we question whether sufficient water quality data will be collected, prior to ground disturbance, to account for natural seasonal variability. We strongly urge that all available baseline data and analysis be included in the Final EIS.

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LETTER #107

We request clarification of the following issues in the Final EIS:

- The DEIS notes that Chevron will sample the water quality of adjacent streams and the Christmas Meadows springs for phenols, heavy metals, water temperature, suspended sediment and dissolved oxygen (pages 3-10 and 3-12). Included among the document's significance criteria for impacts to surface water is contamination to area streams resulting from drilling fluids, drilling wastes, petroleum products or byproducts (page 4-5).

  What is the rationale for the water quality monitoring parameters selected, particularly phenols, and how do those parameters serve to detect the presence of contaminants noted in the significance criteria? We recommend that pH, conductivity, and hydrocarbon constituent measurements also be considered for monitoring potential contamination from drilling, completion, or production fluids.

  The water quality monitoring sites should be illustrated on the project location maps in the FEIS.

- The EIS indicates that sampling for the Christmas Meadows springs is to be conducted twice a year (D-3 and D-4). It is not clear whether this monitoring frequency relates only to baseline data collection or is the proposed frequency during drilling operations as well. If fluid loss occurs during drilling operations, semi-annual monitoring would not likely detect the problem early enough to avoid total contamination of the springs.

- Will effectiveness monitoring be performed on the well pad and road sections close to riparian areas in order to assess effectiveness of erosion control measures? This practice is referenced in the Forest Service Region 4 "Integrated Riparian Evaluation Guide" (page 36). Erosion control monitoring may be particularly appropriate for road work in areas having close proximity to the Main Fork stream channel.

Based on the procedures EPA uses to evaluate the environmental impacts and the adequacy of information provided in EISs of the proposed action and alternatives, the EPA Region VIII rates the Draft Environmental Impact Statement (DEIS) for the Chevron Table Top Prospect as category **EC-2 (Environmental Concerns, Insufficient Information)**. This rating indicates that EPA has identified potential environmental impacts, regarding the protection of water quality, which should be avoided in order to fully protect the environment. Additionally, the Draft EIS lacks baseline water quality information necessary to determine

2

RESPONSE: The Forest has required Chevron to implement a water monitoring program with initial water quality data collection begining last fall. That data was not compiled until after completion of the Draft EIS. A summary of the initial baseline data is included in the FEIS and additional water samples have been collected. This program will be ongoing and includes pH and conductivity.

existing conditions and the potential effects of the proposed activities on water resources.

The EPA appreciates the opportunity to review and comment on the Draft EIS. If you may have questions related to our comments, please contact Larry Kimmel at (303) 293-1697.

Sincerely,

Robert R. DeSpain

Robert R. DeSpain, Chief
Environmental Assessment Branch
Water Management Division

cc: Roy Gunnell, Utah Department of Environmental Quality, Division of Water Quality (Salt Lake City, UT)

3

GOVERNOR'S OFFICE OF PLANNING AND BUDGET
Resource Development Coordinating Committee

Lynne N. Koga, CPA
Office Director
Brad T. Barber
State Planning Coordinator
Rod D. Millar
Committee Chairman
John A. Harja
Executive Director

116 State Capitol
Salt Lake City, Utah 84114
Phone (801) 538-1027
Fax (801) 538-1547

- 5 1993

February 17, 1993

Susan Giannettino
Forest Supervisor
Wasatch-Cache National Forest
8230 Federal Building
125 South State Street
Salt Lake City, UT 84138

SUBJECT: DEIS - Table Top Prospect Exploratory Oil Well
State Identifier Number: UT910906-020

Dear Ms. Giannettino:

The Resource Development Coordinating Committee, representing the State of Utah, has reviewed this draft environmental impact statement. The Division of Wildlife Resources comments:

The Draft EIS does a good job of identifying environmental impacts and means of minimizing those impacts. Major environmental impacts could result if this well should result in a field discovery. In accordance with NEPA, additional analysis would then be completed to address full-field development.

Comments within the text:

Page S-6: Environmental Consequences, paragraph 3: "... if the nest is occupied, construction activities would not be allowed within 645-foot radius of the nest." This should be within 1/2 mile of the nest.

Page 3-17: Wildlife, paragraph 3: Avian species known to occur should also include 3-toed woodpeckers and boreal, flammulated, saw-whet and pygmy owls.

Page 3-17: Wildlife, paragraph 4: The listing of various small mammals should include pine marten.

RESPONSE: S-6 – The 645 foot radius figure is based on the 30 acre nest area around the nest as prescribed in the protocol developed for the Southwest Region. At this time, we do not see the basis for the 1/2 mile buffer.

3-17 – As per phone conversation (May 17, 1993) with Kathy Quinn (UDWR), these species have not been actually found during any surveys, however, these species should be discussed because suitable habitat potentially exists in the project area. The text has been expanded to reflect this comment.

3-17 – Text has been expanded to include pine marten.

LETTER #121

Page 3-20: Paragraph 1: "The Main Fork...is unclassified by the UDWR." The Main Fork is classified as 3B and was measured on 7-28-81 with a flow of 3.25 cfs.

Withdrawal of water from the Main Fork could result in significant impact to fish habitat if large quantities of water are pumped out. The document should stipulate that removal of water from Main Fork cannot exceed 10 percent of total discharge at any time. This supports Forest standards for maintaining fish habitat at 90 percent of potential.

The Division of Wildlife Resources supports the closure of the jeep road. The dates that the access road should be closed to the general public, at the locked gate, are from September 15 through May 1. A parking area and turn around should be developed at the locked gate. Signing should also be in place to notify recreationists of road closure. This will help minimize impacts on elk in the area and give hunters a quality hunting experience.

The Committee appreciates the opportunity to review this proposal. Please direct any other written questions regarding this correspondence to the Utah State Clearinghouse at the above address or call Carolyn Wright at (801) 538-1535 or John Harja at (801) 538-1559.

Sincerely,

Brad T. Barber
State Planning Coordinator

BTB/rpj

3-20 – The text in Chapter 3 has been expanded to reflect this comment.

Mitigation has been added to address this comment.

The text has been changed to incorporate this comment.

LIST OF COMMENTERS TO THE DRAFT ENVIRONMENTAL IMPACT STATEMENT

1 Barker, Jaren	
2 Dykman, James L.	Utah State Historic Preservation Office
3 Maze, Kirk L., President	First National Bank, Evanston, Wy
4 Flaherty, Dennis D.	Chevron U.S.A. Production Company
5 Laudon, Richard B., President	Double Eagle Petroleum and Mining Company
6 Cohagan, Rick	
7 McNeese, T.J.	Chevron
8 Couch, Randall L.	AMOCO Oil Company
9 Jenkins, Joseph A	State of Utah, Department of Economic Development
10 Scales John R.,	Sr. Vice President, Flying J Oil & Gas Inc.
11 Ball, Fred S.	President and CEO, Salt Lake Area Chamber of Commerce
12 Mohn, Doug	
13 McSwain, Harry W.	Crysen Refining, Inc.
14 Putnam, Read H.	
15 Pederson, Kristie Bennion	
16 Stephenson, Howard,	Utah State Senator & President, Utah Taxpayers Association
17 Heffner, Thomas	
18 Hysell, Leonard C.	Uinta County Public Land Use Committee/Wyoming State Board of Outfitters
19 Warlick, T.M & L.M.	Chevron U.S.A., Inc.
20 Freeman, Kay E., President	Christmas Meadows Association, Inc.
21 Collins, Thomas C.,	Wyoming Game and Fish Department, Environmental Coordinator
22 Stewart, Robert F., Chief	USDI, Office of the Secretary, Office of Environmental Affairs
23 Anderson, Robert M.	Heitzman Drill-Site Services
24 Brockhaus, Robert D.	
25 Shaw, Dr. Richard J.	
26 Pertl, Audrey N.	
27 Weston, Lynn P.	
28 Wilson, Richard C.	
29 Proctor, Chris	
30 Thomas, Kirk R.	
31 Hall, Emily H.	
32 Brown, Denise	
33 Duda, Raymond M.	
34 Mitchell, Jerry K.	
35 Bernard, Bonnie	
36 Brooks, Carter, Chief	Utah Regulatory Office, U.S. Army Engineer Corps of Engineers
37 Lang, Pat	
38 Brooks, Lynette	
39 Clark, Valerie	
40 Schultz, Erik W.	Utah Issues Coordinator for the Student Environmental Action Coalition of the University of Utah
41 Allhands, Sharon	
42 Ringer, June	
43 Sherman, Rick	
44 Krebs, G. Cloyd M.D.	
45 Mikkelsen, James E.	
46 Macfarlane, Steve	
47 Pettis, Margaret	

48 Caravati, Martin	
49 Howard, Janet	
50 Clemens, Mark A.	
51 Kennedy, J.J.	
52 Kreuter, Caterine RN, BSN	
53 Egan, Dorothy C.	
54 Davidson, Diane W.	
55 Harrison, David L.	
56 Giddings, Dr. Luther D.	
57 Tolpinrud, Randall	
58 Orr, Nancy	
59 Perry, Mark C.	
60 Dick, Raymond A.	
61 Frankle, Dan	
61 Yeagle, Anne	
62 Vesperman, Gary C.	
63 Swanson, John R.	
64 Hunt, Steven	
65 Dinsdale, Colleen	
66 Gibbonsy, J.A. (Alec)	
67 Harvey, Stewart C.	
68 Meyers, Robert	
69 Kaufman, Steve	
70 Sernka, Thomas J.	
71 Martin, Michael A.	
72 Youngkin, Stephan D.	
73 Thompson, Mr. and Mrs. William H.	
74 Tan, Johnny D.	
75 Osborne, Christine,	Public Lands Specialist, Utah Chapter Sierra Club
76 Park, Gordan L.	Wyoming House of Representatives, District 49
77 Garner, Susan and Patricia	
78 Dinger, Marilyn L.	
79 Green, Joel R.	
80 Babbitt, Clayton M. Jr.	Chevron U.S.A.
81 Kay, James	
82 Feraud, Cheryl M.	Petroleum Association of Wyoming
83 Veranth, John	
84 Macfarlane, Mr & Mrs Jay G.	
85 Macfarlane, Gary	Conservation Director, Utah Wilderness Association
Briggs, Patricia S.	Conservation Chair, Great Salt Lake Audubon
Veranth, John	Conservation Director, Wasatch Mountain Club
86 Williams, Robert D.	State Supervisor, USDI Fish and Wildlife Service, Utah State Office
87 Micheli, Ron	Uinta County Citizens Coalition for Sound Resource Use
88 Smith, Jeff	
89 Lesmeister, Neal	
90 Maddux, Phil	
91 Mueller, Holly	
92 Baughman, Charles	
93 Chase, Frank R.	
94 Phelps, W. Robert	

95 Macfarlane, Gary	
96 Ayre, Larry	
97 Berggren, Leon E.,	Area Manager, Bear River Resource Area, Salt Lake District, BLM
98 Durant, Will, Chairman	Uintah Mountain Club
99 Stone, R. Douglas,	Coordinator/Ecologist State Of Utah, Department of Natural Resources, Utah Natural Heritage Program
100 Burn, Jerry	
101 Ewert, Sara E.D.	
102 Browning, Virginia	
103 Abe, Donna D.	
104 Chinn, Doug	
105 Makarewicz, Barry	
106 Hadley, Heidi K., Hydrogeologist	
107 Robert R. Despain, Chief	Environmental Assessment Branch, Water Management Division, Environmental Protection Agency
108 Kessler, Jeff	Native Ecosystem Council and Friends of the Bow
109 Stewart, Carrie	
110 Stewart, Susan	
111 Groo, Beth	
112 Groo, Robert	
113 Burton, Jan Ellen	
114 Frank____, Kent M.	
115 Jensen, Jerold L.,	Lt. Colonel, (Ret); President, Utah Wildlife Federation
116 Tillotson, Janet C.	
117 Larsen, Bryan	
118 Kohler, Noreen	
119 Hamburger, Randy	
120 Thompson, W. James	
121 Barber, Brad T.	State Planning Coordinator, Resource Development Coordinating Committee, Governor's Office of Planning and Budget

CHAPTER 10
LIST OF AGENCIES, ORGANIZATIONS, AND PERSONS TO WHOM THIS FEIS WAS SENT

CHAPTER 10 - LIST OF AGENCIES, ORGANIZATIONS, AND PERSONS TO WHOM THIS FEIS WAS SENT

The following were sent a copy of the Final Environmental Impact Statement and Record of Decision.

FEDERAL AGENCIES

Department of the Interior, Fish & Wildlife Service, Utah State Office
Department of the Interior, Bureau of Land Management, Salt Lake District
Department of the Interior, Office of Environmental Affairs
Department of the Army, Army Corp of Engineers
Environmental Protection Agency, Region VIII
Forest Service - USDA
Head, Aquisitions, and Serials Branch, USDA-National Agricultural Library
Management Information Office, Office of Federal Activities, Environmental Protection Agency

STATE AND LOCAL AGENCIES

City of Evanston, Planning & Zoning Commission
Resource Development Coordinating Committee
Uinta County Sheriff Dept.

CONGRESSIONAL DELEGATION

Congressman Craig Thomas
Congressman Bill Orton
Congressman Jim Hansen
Congresswoman Karen Shephard

ORGANIZATIONS

Evanston Chamber of Commerce
The Wilderness Society
Utah Neighborhood Council
Utah Wildlife Leadership Coalition
Utah Wilderness Association
Utah Chapter Sierra Club
Utah Professional Archaeological Council

COMPANIES

Chevron U.S.A. Inc.
Columbia Gas
Conoco
Double Eagle Pet/Minerals Company
Ecology and Environment, Inc.
Exxon Exploration Company
Heitzman Drill Site Services
Phillips Petroleum
Welling Ford Sales, Inc.
Wolverine Exploration Company

MEDIA

Uinta County Herald

INDIVIDUALS

Ben F. Waterfield, Jr.
Bill Stokes
Brian Wood
Chris Wangsgard
Edward L. Poll
Helane B. Leta
Jack T. Spence
John A. Senulis
Kay E. Freeman
Margaret Pettis
Mike Sims
Mr. Brent R. Jensen
R. Courtney Richards
Richard King
Robert & Carma Owen
Robert Schellhase
Scott Williams
Stephen W. Lewis
Ted Olsen

The following Agencies, Organizations, and Persons were mailed a copy of the Summary and the Record of Decision.

FEDERAL AND STATE AGENCIES

Uinta County Weed Supervisor
Wyoming State Game & Fish Department

ORGANIZATIONS

National Energy Foundation
Native Ecosystem Council and Friends of the Bow
Petroleum Association of Wyoming
Petroleum Retailers Organization
Rocky Mountain Oil & Gas Association
Salt Lake Area Chamber of Commerce
Student Environmental Action Coalition U of U
Uinta County Public Land Use Committee and Wyoming State Board of Outfitters
Utah Petroleum Association
Utah Wildlife Federation
Utah Taxpayers Association
Utah Mining Association

COMPANIES

Carter Creek Gas Plant,
Cazin & Houtz, Inc.
Cyrsen Refining
First National Bank, Evanston
Flying J Oil & Gas Inc.
Painter and Company
VanCott, Bagley, Cornwall & McCarthy

INDIVIDUALS

Barbara Barnes
Barry Makarewicz
Bonnie Bernard
Brad Froseth
Brian Horejsi
Bryan Larsen
C. Anderson
Calvin W. Taylor
Carrie Stewart
Catherine Kreuter RN, BSN
Cheryl M. Feraud
Chuck Richardson
Clayton M. Babbitt Jr
Colleen Dinsdale
Dan Frankle & Anne Yeagle
Darvin Christofferson
Dave Madia
David Datteri
David S. Mathews
David L. Harrison
Denise Brown
Diane W. Davidson
Donna D. Abe
Dorothy C. Egan
Doug Chinn
Doug Mohn
Dr. Richard J. Shaw
E. Jay Daley
Emily H. Hall
Frank Chase
G. Cloyd Krebs M.D.
G. Chris Christensen
Gary Bringhurst
Gary C. Vesperman
George W. Diehl
Gordon Park
Holly Mueller
J.J. Kennedy
James W. Thompson
James Kay
Jan Ellen Burton
Jeff Smith
Jeran Barker
Jerry K. Mitchell
Jerry Burn
Joel R. Green
John D. Ipson
John Veranth
John Gardner
John R. Swanson
Johnny D. Tan
Joseph D. Davis
June Ringer
K. G. Falkner
Kirk Maze

Kory Dell & Darlene B. Judd
Kristie Bennion Pederson
L. R. Bowman
Lewis T. Nielsen
Loreta M. Webster
Lynette Brooks
Lynn P. Weston
Lynne Gucwa
Mark A. Clemens
Mark McKeough
Mark Zaugg
Martin Caravati
Michael A. Martin
Milton Goff
Mr & Mrs. William H. Thompson
Mr & Mrs. Jay G. Macfarlane
Mrs. Audrey N. Pertl
Ms. Marilee Cambell
Nancy Orr
Noreen Kohler
Nyles L. Christensen
Pat Lang
Paul R. Ord
Paul C. Smith
Phil Maddux
Randall L. Couch
Randy Hamburger
Read H. Putnam
Richard Spotts
Rick Cohagan
Rick Sherman
Robert Meyers
Robert D. Brockhaus
Ron Micheli
Rulon R. Osmond
Sara E.D. Ewert
Scott B. Smith
Sharon Allhands
Stanley Liptrot
Stephan D. Youngkin
Steve Widmer
Steve Macfarlane
Steven Hunt
Stewart C. Harvey
Susan Stewart
T. J. McNeese
T. M. & L. M. Warlick
Thomas Heffner
Thomas J. Sernka
Virginia Browning
Virginia Tabot
W. Robert Phelps

APPENDICES

APPENDIX A – AUTHORIZING ACTIONS

In order to proceed, permits and approvals from both the Forest Service and BLM as well as State and County permits would be required. A list of the permits and approvals needed to construct, operate, maintain, and abandon Chevron's proposed action is summarized in Table A–1.

Federal Requirements

Forest Service The Federal Onshore Oil and Gas Leasing Reform Act of 1987 (Public Law No. 100–203) authorizes the Forest Service to regulate all surface–disturbing activities on oil and gas leases on National Forest System lands [30 U.S.C. 226(g)]. The Forest Service is responsible for ensuring that development activities are conducted in a manner that minimizes effects on surface resources (36 CFR 228.107).

In compliance with the National Forest Management Act of 1976 (NFMA), a timber sales settlement for National Forest System lands must be approved to account for timber that is cut, damaged, or destroyed during mineral–related activities.

Bureau of Land Management Federal minerals located under National Forest System lands are administered by the BLM. Because of its management responsibilities for Federal mineral, Chevron's APD was submitted to the BLM for processing and approval. Drilling of the exploratory oil well would be subject to all applicable BLM onshore oil and gas orders and surface operating standards for oil and gas exploration. Procedures are established for exploration of Federal oil and gas reserves in a series of Onshore Oil and Gas Orders , which are authorized by 43 CFR Part 3160 and 3180. These orders detail uniform national standards for minimum levels of performance expected from lessees and operators when conducting oil and gas activities on Federal and native American lands. Two orders are particularly relevant to determining the potential for environmental impacts associated with the proposed action and alternatives (except the no–action alternative). These are the Onshore Oil and Gas Order No. 1 and Onshore Oil and Gas Order No. 2.

Onshore Order No. 1 requires lessees and operators to conduct their exploration, development, production and construction operations in a manner which:

- conforms with applicable Federal laws and regulations and with State and local laws and regulations to the extent that such State and local laws are applicable to operations on Federal or Indian leases;
- conforms with the lease terms, lease stipulations and conditions of approval;
- results in diligent development and efficient resource recovery;
- protects the lease from drainage;
- affords adequate safeguards for the environment;
- results in proper reclamation of disturbed lands;
- conforms with currently available technology and practice;
- assures that underground sources of fresh water will not be endangered by any fluid injection operation; and
- otherwise assures the protection of the public health and safety.

In addition, the order holds Chevron "fully accountable for their contractors' and subcontractors' compliance with the requirements of the approved permit and/or plan".

Onshore Order No. 1 specifically requires survey work and a related report if the surface management agency has reason to believe that properties listed, or eligible for listing, on the National Register of Historic Places (NRHP) are present in the area of potential effect. The order also requires the surface–management agency to identify any threatened and endangered species and/or critical habitat problems

and other environmental concerns (e.g., wilderness and wilderness study areas, wild and scenic rivers, known or potential surface geological hazards, etc.). In compliance with the provisions of Onshore Order No. 1, cultural and threatened and endangered species surveys of the proposed action have been completed (Chapter 3 and 4).

Order No. 2 establishes specific and detailed requirements along with minimum standards for the following: well control during drilling, casing and cementing, drilling mud and the circulating system, drill-stem testing, special drilling operations, related surface use, and the abandonment of drilling operations. In some instances, the order relies on existing standards prepared by the American Petroleum Institute (API), Occupational Safety and Health Administration (OSHA), and other organizations or agencies.

Order No. 2 requires that blowout preventer equipment (BOPE) be installed, used, maintained and tested in a manner necessary to assure well control. BOPE is used to prevent the uncontrolled release of formation fluids to the surface. BOPE must be in place and operational prior to drilling the surface casing shoe unless otherwise approved by the BLM. Well control equipment must be capable of complete closure of the well bore.

Order No. 6 requires a Public Protection Plan and Drilling Plan for certain H2S situations.

Fish and Wildlife Service (FWS) Any area potentially affected by surface-disturbing activities that provides habitat for Federal threatened or endangered species are protected by the Endangered Species Act of 1973. Chapter 3 of this EIS provides information regarding surveys conducted to date in compliance with this Act and Forest Service and BLM regulations.

The Endangered Species Act obligates Federal agencies to ensure that actions, which they authorize or permit, "are not likely to jeopardize the continued existence of any endangered species" [42 U.S.C. 1536(a)(2)]. The Endangered Species Act is designed to protect endangered species in two ways: 1) prohibiting jeopardizing their continued existence; and 2) indirectly prohibiting adverse modification of their critical habitat. The Forest Service and BLM are prohibited from authorizing or permitting any activity that would result in either of the two effects. The FWS defines jeopardize as follows:

> "to engage in any activity or program which reasonably would be expected to reduce the reproduction, number or distribution of a listed species to such an extent as to appreciably reduce the likelihood of the survival and recovery of that species in the wild" (50 CFR 420.02)

As a first step, the Endangered Species Act requires the permitting agency to request the FWS to provide information on whether any endangered, threatened or proposed species may be present in the project area. The FWS's response to that request is contained in Appendix C.

Army Corps of Engineers The Army Corps of Engineers (COE) regulates the discharge of dredged or fill material related to construction of roads, well pads and ancillary project components in waters of the U.S., which includes adjacent wetlands, pursuant to Section 404 of the Federal Clean Water Act (33 CFR 323.1). The discharge must also comply with the U.S. Environmental Protection Agency's (EPA) Section 404(b)(1) guidelines (40 CFR Part 230).

A COE nationwide general permit would apply to activities associated with the proposed action or alternatives. A general permit is issued on a nationwide basis for specific categories of activities that are substantially similar and cause minimal environmental impacts. Nationwide permits are designed to allow work to occur with little delay or paperwork. Special conditions must be followed for the permit to be valid. Failure to comply with the management practices, to the degree practicable, may cause the COE's district engineer to take action to regulate the activity on an individual or regional basis.

Executive Orders 11988 and 11990 Two executive orders (EO) may affect implementation of the proposed action or alternatives. The EOs place restrictions on government approval of construction activities in floodplains and wetlands. They are binding on all governmental agencies including the Forest Service and BLM. The EOs require consideration of wetland and floodplain impacts in all documents prepared in compliance with NEPA.

Executive Order 11988 (42 FR 26951) was mandated in 1977 and was designed to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values of floodplains. The EO defines a floodplain as the "lowland and relatively flat areas adjoining inland and coastal waters including floodprone areas of offshore islands, including at a minimum, that area subject to a one percent or greater chance of flooding in any given year" (Codification of Presidential Proclamations and Executive Orders).

The Forest Service and BLM are required by EO 11988 to restore and preserve the natural and beneficial values of floodplains in all activities conducted by the agencies, which affect land use, including regulating and licensing activities. Both agencies are required to evaluate the potential effects of agency actions (such as approval of the APD or issuance of a special use permit) on floodplains. If construction would occur in a floodplain, the agencies are required to consider alternatives to avoid adverse effects and incompatible development in the floodplain. If the agencies determine that the only practicable alternative requires siting in a floodplain, the agencies are required to design or modify the project in order to minimize the potential harm to or within the floodplain.

Executive Order 11990 (42 FR 26961) also was mandated in 1977 to avoid, to the extent possible, the long- and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct and indirect support of new construction in wetlands wherever there is a practicable alternative. To the extent permitted by law, the Forest Service and BLM are prohibited from undertaking or providing assistance for new construction located in wetlands unless the agencies find: 1) that there is no practicable alternative to the construction; and 2) that the action includes all practicable measures to minimize harm to the wetland. The EO supports regulatory authority provided to the COE.

State Permitting Requirements In addition to the Federal approvals discussed above, several permits also would be required from the States of Wyoming and Utah.

Wyoming Department of Transportation Transport permits from the State of Wyoming would be required for transporting oversize, overweight, or overlength loads on State and Federal highways.

Utah Department of Transportation Transport permits from the State of Utah would be required for oversize, overweight, or overlength loads on State and Federal highway.

Utah State Engineer's Office A permit from the State Engineer's Office would be required to appropriate ground water (well) and/or surface water for drilling operations and dust control. Also, the State Engineer's Office is responsible for granting the authority to construct a streamcrossing structure (bridge).

Utah Oil and Gas Conservation Commission Aside from the APD, approval to drill the well also must be obtained from the Utah Oil and Gas Conservation Commission. This includes a Notice of Intention to Drill (Title 40-6, Rule C-4), Application for Permit to Use Earthen Pit (Title 40-6, Rule C-17), authorization for flaring and venting of gas (Title 40-6, Rule C-27), temporary well abandonment (if the well is shut in prior to production) (Title 40-6, Rule 22), plugging and abandonment procedures for permanently abandoning a well (Title 40-6, Rule D-1), and approval of unitization (Title 40-6, Rule C-2).

TABLE A-1
AUTHORIZING ACTIONS

Issuing Agency/Permit Name	Nature of Action	Authority	Applicable Project Component
FEDERAL			
Department of Agriculture			
Forest Service			
Surface Use Plan Of Operation (SUPO)	Approval of SUPO	Onshore Oil and Gas Order Nos. 1 and 2, 36 CFR 228 (e)	All surface-disturbing activities
Timber Sales Settlement	Accounts for timber cut, damaged or destroyed during mineral-related activities on NFS lands	National Forest Management Act of 1976 (16 U.S.C. 472a) and 36 CFR 221 and 223	All surface-disturbing activities
Special Use Authorization	Occupancy or use of NFS lands	Occupancy Permits Act of March 4, 1914 and 36 CFR 251	All surface-disturbing activities, including road use, bridge use
Mineral Materials Permit	Occupancy of a gravel site and extraction of common variety minerals (gravel)	Common Varieties of Minerals Materials, Act of July 31, 1947 (61 Stat. 681), as amended by the Act of August 31, 1950 (64 Stat.571), and the Act of July 23, 1955 (69 Stat. 367:30 USC 601-603) and pursuant to the act of June 11, 1960 (74 Stat. 205), (36 CFR 228 (c).	Gravel source
Antiquities and Cultural Resources Permits	Antiquities and cultural resources use permit to excavate or remove cultural resources from Federal lands	Antiquities Act of 1906 (16 U.S.C. Sections 431-433); Archaeological Resources Public Protection Act of 1979 (16 U.S.C. Sections 470aa-47011); 43 CFR 3	All surface disturbing activities
Department of the Army			
Corps of Engineers			

TABLE A-1 (Cont.)
AUTHORIZING ACTIONS

Issuing Agency/Permit Name	Nature of Action	Authority	Applicable Project Component
Section 404 Permit (nationwide)	Controls placement of dredged or fill material in waters of the United States including adjacent wetlands	Section 404 of the Clean Water Act of 1972 (40 CFR 122-123)	Access road crossings of streams and wetland
Department of the Interior			
Bureau of Land Management			
Permit to Drill or Deepen	Controls drilling for oil and gas on Federal onshore leases	Mineral Leasing Act of 1920 (30 U.S.C. 181 et seq.); 43 CFR 3160	Well pad construction, drilling, completion and reclamation activities
Approval of Unitization	Provides for efficient and timely development and production of Federal oil and gas leases	Mineral Leasing Act of 1920 (30 U.S.C. 181 et seq.); 43 CFR 3180	Table Top Prospect Unit
Approval to dispose of produced water	Controls disposal of produced water from Federal leases	Mineral Leasing Act of 1920 (30 U.S.C. 181 et seq.); 43 CFR 3160; Onshore order #7	Well
Application for Permit to Use Earthern Pit (part of APD)	Regulates reserve pits on drilling locations	Mineral Leasing Act of 1920 (30 U.S.C. 181 et seq.); 43 CFR 3160; NTL - 4A	Well
Authorization for Flaring and Venting of Gas	Regulates flaring and venting of gas	Mineral Leasing Act of 1920 (30 U.S.C. 181 et seq.); 43 CFR 3160	Well testing and evaluation
Temporary Well Abandonment of a Well	Regulates temporary abandonment of wells	Mineral Leasing Act of 1920 (30 U.S.C. 181 et seq.); 43 CFR 3160	Successful well
Plugging and Abandonment of a Well	Establishes procedures for permanently abandonment of a well	Mineral Leasing Act of 1920 (30 U.S.C. 181 et seq.); 43 CFR 3160	Dry hole
Fish and Wildlife Service			

TABLE A-1 (Cont.)
AUTHORIZING ACTIONS

Issuing Agency/Permit Name	Nature of Action	Authority	Applicable Project Component
Consultation Process, Endangered or Threatened Species	Preliminary Biological Assessment	Section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. et seq.)	All surface disturbing activities
STATE			
Wyoming Department of Transportation			
Oversize, Overweight and Overlength Load Permits	Permits for oversize, overlength and overweight loads	Chapters 17 and 20 of the Wyoming Highway Department Rules and Regulations	Transportation of equipment and material on State and Federal highways
Utah Department of Transportation			
Oversize, Overweight and Overlength Load Permits	Permits for oversize, overlength and overweight loads	Criminal & Safety Code, Highway Code Section, Statute 2712, and 148 through 156	Transportation of equipment and material on State and Federal highways
Utah State Engineers Office			
Water use and appropriation permit	Grant permit to drill a water well and appropriate ground and surface water	Title 73, Water Laws of Utah and Interstate Compacts and Treaties, 1964	Water for dust control during construction and mudding the hole during drilling
Stream Crossing Permit	Grant authority to construct a stream crossing structure	Stream Alteration Act, 1971 updated in 1985 under 73-3-29 of Utah Code annotated, 1953. Administrative Rules for Stream Channel Alterations adopted July 15, 1987.	Bridge construction and temporary stream crossing
Utah Oil and Gas Conservation Commission			
Notice of Intention to Drill	Controls drilling for oil and gas in the State of Utah	Utah Oil & Gas Conservation Act of 1955, Utah Oil & Gas Conservation Commission Regulations (Title 40-6, Rule C-4)	Drilling and completion activities

TABLE A-1 (Cont.)
AUTHORIZING ACTIONS

Issuing Agency/Permit Name	Nature of Action	Authority	Applicable Project Component
Approval of forming a unit	Provides for conservation of oil and gas in production of a pool.	Utah Oil & Gas Conservation Act of 1955, Utah Oil & Gas Conservation Commission Regulations (Title 40-6, Rule C-2)	
Application for Permit to Use Earthen Pit	Regulates reserve pits on drilling locations	Utah Oil & Gas Conservation Act of 1955, Utah Oil & Gas Conservation Commission Regulations (Title 40-6, Rule C-17).	Well
Authorization for Flaring and Venting of Gas	Regulates flaring and venting of gas (if gas is present)	Utah Oil & Gas Conservation Act of 1955, Utah Oil & Gas Conservation Commission Regulations (Title 40-6, Rule C-27).	Well testing and evaluation
Temporary Well Abandonment	Regulates temporary abandonment of wells (if shut in)	Utah Oil & Gas Conservation Act of 1955, Utah Oil & Gas Conservation Commission Regulations (Title 40-6, Rule C-22).	Successful well
Plugging and Abandonment of a Well	Establishes procedures for permanently abandoning a well	Utah Oil & Gas Conservation Act of 1955, Utah Oil & Gas Conservation Commission Regulations (Title 40-6, Rule D-1).	Dry hole
Summit County			
Letter of Approval on Submitted Plans	Approves plans for disposal of waste water and solid waste disposal	County ordinance (Summit County, adopted DEQ Regulations)	Portable toilets and solid waste

APPENDIX B - APPLICATION FOR PERMIT TO DRILL AND SURFACE USE PLAN

Form 3160-3
(November 1983)
(formerly 9-331C)

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0136
Expires August 31, 1985

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

5. LEASE DESIGNATION AND SERIAL NO.
U - 24446

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

1a. TYPE OF WORK
DRILL [X] DEEPEN [ ] PLUG BACK [ ]

7. UNIT AGREEMENT NAME
TABLE TOP UNIT

b. TYPE OF WELL
OIL WELL [X] GAS WELL [ ] OTHER SINGLE ZONE [ ] MULTIPLE ZONE [X]

8. FARM OR LEASE NAME

2. NAME OF OPERATOR
CHEVRON U.S.A. PRODUCTION CO.

9. WELL NO.
CHEVRON FEDERAL 1-16

3. ADDRESS OF OPERATOR
P.O. BOX 599, DENVER, CO 80201

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.+)
At surface
244'NSL, 1161' EWL
At proposed prod. zone

10. FIELD AND POOL, OR WILDCAT
WILDCAT

11. SEC., T., R., M., OR BLK.
AND SURVEY OR AREA
SEC. 16, T1N, R10E

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE+
APPROXIMATELY 27 MILES SOUTHEAST OF EVANSTON, WYOMING

12. COUNTY OR PARISH
SUMMIT

13. STATE
UTAH

15. DISTANCE FROM PROPOSED+
LOCATION TO NEAREST
PROPERTY OR LEASE LINE, FT.
(Also to nearest drlg. unit line, if any)
244'

16. NO. OF ACRES IN LEASE
960

17. NO. OF ACRES ASSIGNED
TO THIS WELL
NA

18. DISTANCE FROM PROPOSED LOCATION+
TO NEAREST WELL, DRILLING, COMPLETED,
OR APPLIED FOR, ON THIS LEASE, FT.
NA

19. PROPOSED DEPTH
17,000'

20. ROTARY OR CABLE TOOLS
ROTARY

21. ELEVATIONS (Show whether DR, FT, GR, etc.)
9650' GL

22. APPROX. DATE WORK WILL START+
SEPTEMBER 15, 1993

PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
24"	20"	94#	80'	TO SURFACE
17.5"	13.375"	54.5#	5000'	TO SURFACE
12.25"	9.625"	36#	12,700'	TO 5,000'
8.25"	7"	26#	17,000'	TO 12,000

BE ADVISED THAT CHEVRON U.S.A. PRODUCTION CO. IS CONSIDERED TO BE THE OPERATOR OF WELL NO. CHEVRON FEDERAL 1-16, SUMMIT COUNTY, UTAH, LEASE NO. U - 24446 AND IS RESPONSIBLE UNDER THE TERMS AND CONDITIONS OF THE LEASE FOR THE OPERATIONS CONDUCTED ON THE LEASED LANDS.

BOND COVERAGE FOR THIS WELL IS PROVIDED BY NATIONWIDE BOND NO. 8 89-75-81-34 (STANDARD OIL COMPANY OF CALIFORNIA AND ITS WHOLLY OWNED SUBSIDIARY, CHEVRON U.S.A. PRODUCTION CO., AS CO-PRINCIPALS) VIA SURETY CONSENT AS PROVIDED FOR IN 43 CFR 3104.2.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.

SIGNED J. Watson TITLE PERMIT SPECIALIST DATE 6/8/93

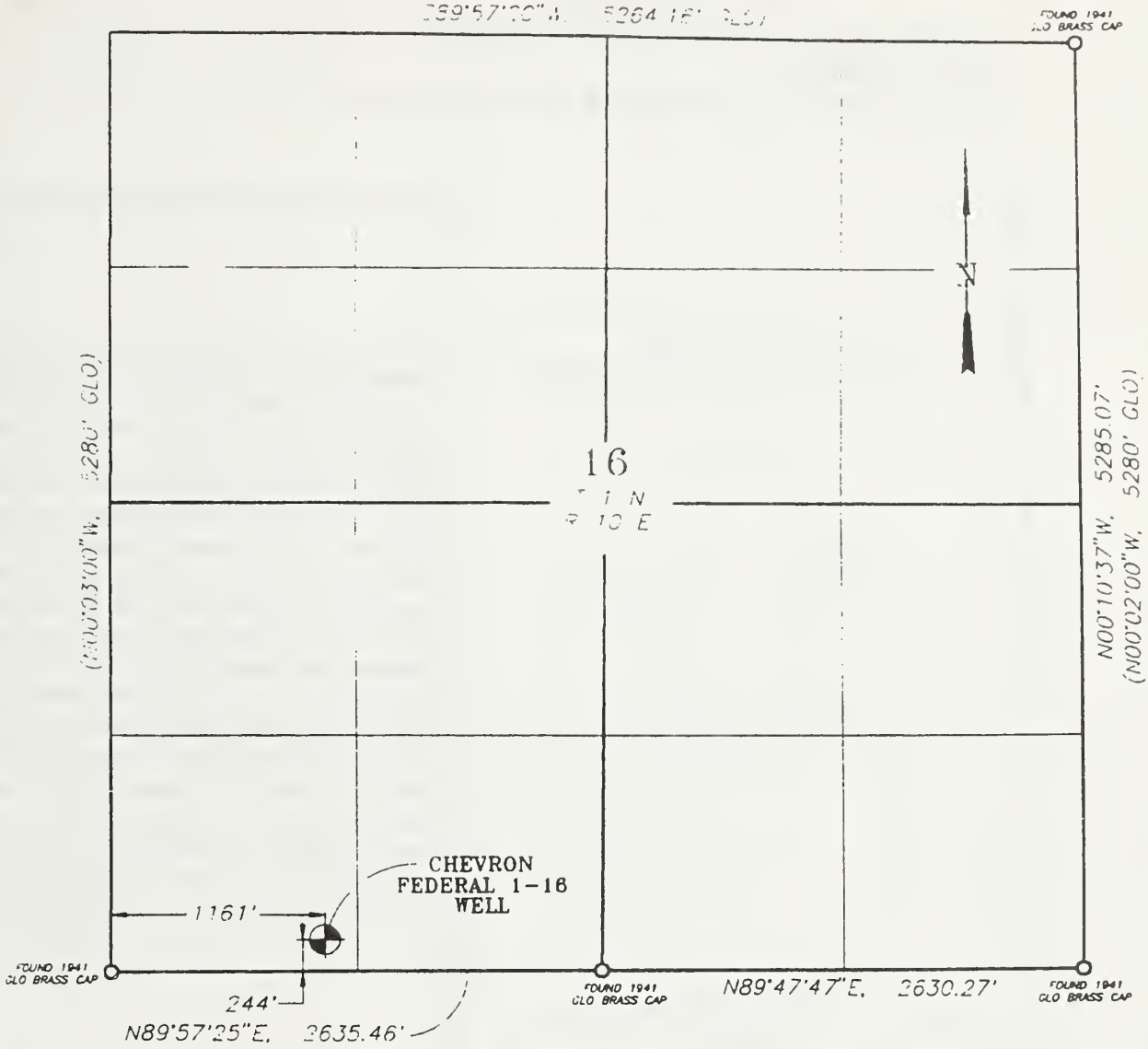
(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

+See Instructions On Reverse Side

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.



LOCATION MAP

MAP TO ACCOMPANY
APPLICATION FOR PERMIT TO DRILL

TABLE TOP CREEK PROSPECT
CHEVRON FEDERAL 1-16
SW 1/4 SW 1/4 SECTION 16
T 1 N, R 10 E, S.L.B.M.
SUMMIT COUNTY, UTAH

CHEVRON U.S.A.
P.O. BOX 6004
EVANSTON, WYOMING 82931

SURVEYED UNDER MY SUPERVISION IN
JULY 1991

JOHN A. PROFFIT Registered Land Surveyor 2860 4/10/92 STATE OF UTAH

John A. Proffit
JOHN A. PROFFIT UTAH R.L.S.#2860

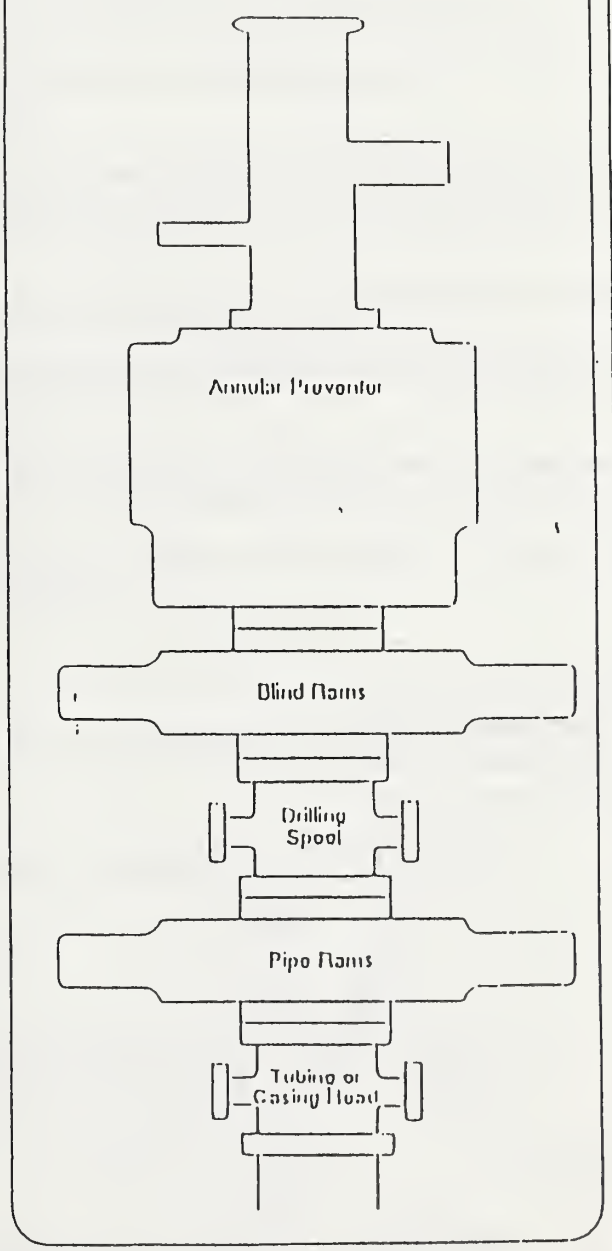
UINTA ENGINEERING & SURVEYING, INC.
808 MAIN STREET
EVANSTON, WYOMING 82930
(307) 789-3602

DISK # 071 FILE: TOPO
JOB # 91-23-05 DATE: 04-07-92
DRAWN BY: Grant Sanders

E. CLASS III BLOWOUT PREVENTER STACK:

The Class III preventer stack is designed for drilling or workover operations. It is composed of a single hydraulically operated annular preventer on top, then a blind ram preventer, a drilling spool, and a single pipe ram preventer on bottom. The choke and kill lines are installed onto the drilling spool and must have a minimum internal diameter of 3". All side outlets on the preventers or drilling spool must be flanged, studded, or clamped. An emergency kill line may be installed on the wellhead. A double ram preventer should only be used when space limitations make it necessary to remove the drilling spool. In these instances, the choke manifold should be connected to a flanged outlet between the preventer rams only. In this hookup, the pipe rams are considered master rams only, and cannot be used to routinely circulate out a kick. The Class III blowout preventer stack is shown to the right in Figure 11J.4.

Figure 11J.4 -
Class III Blowout Preventer Stack



D. CLASS III CHOKE MANIFOLD

The Class III choke manifold is suitable for Class III workovers and drilling operations. The Standard Class III choke manifold is shown in Figure 11J.0 below. Specific design features of the Class III manifold include:

1. The manifold is attached to a drilling spool or the top ram preventer side outlet.

2. The minimum internal diameter is 3" (nominal) for outlets, flanges, valves and lines.

3. Includes two steel gate valves in the choke line at the drilling spool outlet. The inside choke line valve may be remotely controlled (HCR).

4. Includes two manually adjustable chokes which are installed on both side of the manifold cross. Steel isolation gate valves are installed between both chokes and the cross, and also downstream of both chokes.

5. Includes a bloogy line which runs straight through the cross and is isolated by a steel gate valve.

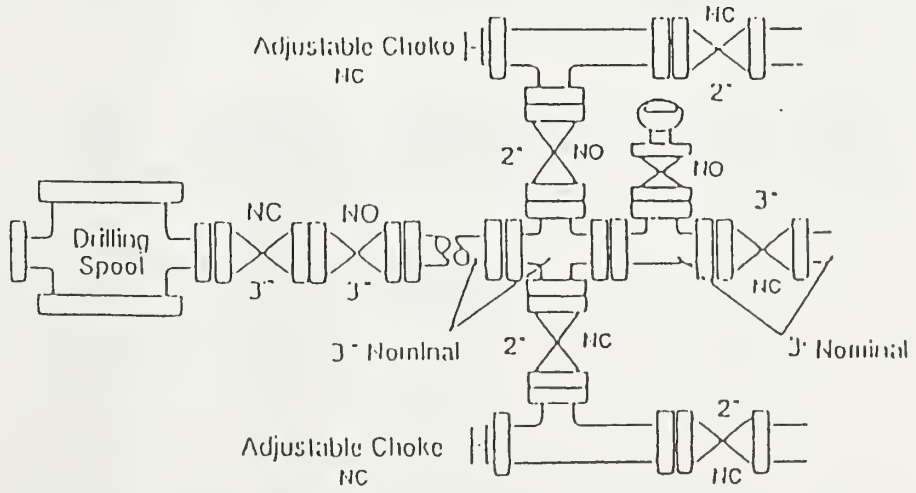
6. Includes a valve isolated pressure gauge suitable for drilling service which can display the casing pressure within view of the choke operator.

7. Returns through the choke manifold must be divertible through a mud-gas seperator and then be routed to either the shale shaker or the reserve pit through a buffer tank or manifold arrangement.

8. If the choke manifold is remote from the wellhead, a third master valve should be installed immediately upstream of the manifold cross.

Figure 11J.0 - Class III Choke Manifold

NC = Normally Closed
NO = Normally Open



D. TYPE "B" KILL LINE — CLASS III, IV, AND V WELLS

The type B kill line described below in Figure 11J.11 is the minimum recommended hookup for installation on all Class III, Class IV and Class V wells. Specific design features of the type B kill line include:

1. The preferred kill line connection to the well is at the drilling spool, however, a preventer side outlet may be used when space restrictions exclude the use of a drilling spool. In all cases, the kill line must be installed below the uppermost blind rams so the well can be pumped into with no pipe in the hole.

2. The arrangement includes two - 2" (nominal) gate valves installed at the drilling spool and an upstream fluid cross. The outside valve may be hydraulically remote controlled.

3. Two pump-in lines should be attached to the fluid cross. The primary kill line should be routed to the rig standpipe where it can be manifolded to the rig pumps. The remote kill line should be run to a safe location away from the rig or to the rig cementing unit. The remote kill line should have a loose end connection for rigging-up a high pressure pumping unit.

4. Both the primary kill line and the remote kill line must include a 2" check valve which is in working condition while drilling. If a check valve is crippled for testing purposes, the flapper or ball must be re-installed and tested before drilling resumes.

5. The primary kill line must include a pressure gauge which can display the pump-in pressure on the rig floor.

6. Any lines which are installed at the wellhead are designated as "emergency kill lines" and should only be used if the primary and remote kill lines are inoperable.

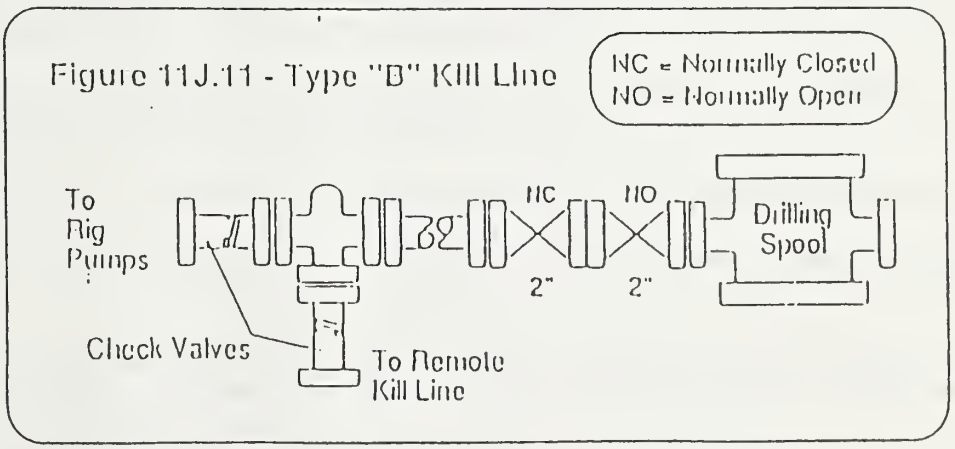


Figure 11J.11 - Type "B" Kill Line

DRILLING PROGRAM ATTACHMENT

GENERAL REMARKS

1. Applicable Federal and State Regulations will be adhered to during the drilling of this well.

2. The drilling rig is to be level and the kelly centered over the hole before drilling operations commence. Check periodically during the drilling of the well to insure the rig stays level.

3. Prior to spud insure all toolpushers, drillers and crews are thoroughly familiar with and understand the Chevron procedure for handling well kicks.

   In H_2S environments Chevron's contingency plan for your location is to be read, understood and adhered to. All personnel are to be thoroughly familiar with the use of air packs, the air supply system, locations of air packs and what to do in the event of sour gas to surface.

4. Test BOPE before drilling out and every seven days thereafter. Perform low pressure test (200 psi) and high pressure test. High pressure test should be 70% of BOPE working pressure or 70% of burst of last casing string, whichever is less. Record BOP tests on Tour Reports. Notify applicable Federal and State Regulatory Agencies 24 hours in advance of BOPE tests and record notification and names on Tour Reports.

5. Do not reuse ring gaskets. Replace with new Rx or Bx ring gaskets.

6. Separate full opening safety valves and inside BOP's are required for each size drill pipe in use. Test weekly with BOPE.

7. Run full open valve below kelly that can be run in the hole if necessary. Do not use this valve as a mud saver sub.

8. BOP controls are to remain in the open position during drilling operations.

9. Hold pit drills for each crew at least once every seven days and record on Tour Reports.

10. On trips fill the annulus before hydrostatic pressure drops 75 psi or every 5 stds of drill pipe, whichever is first. Use trip tanks to measure hole fill-up and monitor at all times.

11. Use drill pipe floats at all times unless your supervisor instructs otherwise.

12. Have wear ring installed in wellhead before tripping or rotating. Remember to remove wear ring before running casing or when testing BOPE.

13. Casing rams are to be installed and bonnets tested on last trip out before running casing.

14. Run pilot and thickening time tests with rig mixing water for all cement slurries prior to cementing operations.

15. Casing should be tested to 1,500 psi or 0.2 psi/ft., whichever is greater, prior to drilling out and recorded on Tour Reports. Discuss the test pressure with your supervisor and reference DM-49 before testing.

16. Drill out slick beneath each casing string. Drill deep enough to bury stabilization to be picked up.

17. Do not drill with hardbanded pipe inside of casing.

18. Do not run full gauge stabilizers. Run stabilizers 1/16" to 1/8" undergauge.

19. When necessary to work pipe, keep pipe moving up and down. Rotating alone is not considered sufficient.

20. Install and test full lubricator on all logging runs unless instructed otherwise by supervisor.

21. Fully describe damaged or lost equipment on Tour Reports.

CHEVRON U.S.A. PRODUCTION COMPANY
CHEVRON FEDERAL 1-16
SEC. 16, T1N, R10E
SUMMIT COUNTY, UTAH

1. EXISTING ROADS

A. See Exhibit A. We do not plan to change, alter or improve upon any existing state or county roads.

B. Access to the proposed site proceeds from Evanston, Wyoming, south on Highway 150 (Mirror Lake Highway) approximately 33 miles to the intersection of the Mirror Lake Highway and Stillwater Road (Forest Road No. 057) in Summit County, Utah. From the intersection with Stillwater Road, the access would then proceed in a southerly direction about 0.8 miles to the fork of Stillwater and Peninsula roads. Follow the Peninsula Road to its end (about 1.7 miles).

2. PLANNED ACCESS

Approximately 0.8 mile of the existing Peninsula Road needs to be upgraded and will need to be widened where trees have grown into the ditches and road shoulders. In addition, several curves require widening. A 4" cap of 2" minus native material will be applied.

From the end of Peninsula Road, approximately 2.8 miles of new road will be constructed to the proposed well site.

A detailed road design will be provided under separate cover.

A. Maximum width: 14 foot travel surface.
B. Maximum sustained grade: 8%.
C. Drainage design: Wet areas/riparian habitat will be avoided, where possible, and an undisturbed buffer strip of vegetation left between these areas and the road to help in controlling any sediment runoff from the road. Drainage culverts will be 18 inch minimum. 24" culverts will be placed in areas of water movement.
D. Surface materials: During the exploratory phase of the project will be 2 inch and less screened native material. If the well is successful, a gravel surface meeting Forest Service specifications will be spread on the road as soon as reasonable.
E. Turnouts: As shown in road design detail.
F. Cuts and fills: As shown in road design detail.
G. Gates, cattleguards, fence cuts: Where required.

Construction will not take place with frozen earth or during extremely muddy conditions. The road will be dampened to control dust.

3. LOCATION OF EXISTING WELLS

Wolverine - approximately 2 miles northeast, is a dry hole.

4. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES

See Exhibits A and C.

Production facilities on location would include a flare pit, separator, 3 - 400 barrel oil tanks and 1 - 400 barrel tank (based on an estimated 600 to 650 bbl/day produced) for produced water if the well is successful.

A blooie pit 8' x 10' x 5' deep will be constructed 150' diagonally from the center hole. A line will be placed on the surface from the center hole to the burn pit.

5. LOCATION AND TYPE OF WATER SUPPLY

We propose to drill a water source well on the location. This will be permitted with the Utah State Engineer. In addition, we propose to apply for a water haul permit from the bridge crossing on the Stillwater to begin construction of the road and also from the crossing on the Main Fork as a backup source to the water well, as well as for construction of the access and location. This water may be pumped through a temporary line to the pad or hauled by truck from the closest Main Fork crossing.

6. SOURCE OF CONSTRUCTION MATERIALS

All construction materials not obtained onsite will come commercially from the local area. We propose to use a source near the access road to gravel the road and location. A rock crusher and/or screen will be moved onto the site. The gravel pit will be rehabed following use.

7. METHODS FOR HANDLING WASTE DISPOSAL

A reserve pit 86' x 221' x 23' deep will be constructed on site to store drilling cuttings and produced fluids and drilling-rig wash. The pit will be lined with an artificial polyurethane liner (burst strength of 450 psi).

Following drilling, if the well is unsuccessful, as much of the liquid waste as is possible will be reinjected downhole prior to plugging. The remaining liquids will be removed and transported to an approved disposal site.

In the event fluids are produced, any oil will be retained in tankage until sold and any water produced will be retained until its quality is determined. The quality and quantity of water produced will then determine the necessary disposal

procedure.

Sewage will be disposed of in a 1,000 gallon fiberglass insulated holding tank, which is to be placed in the vicinity of the trailers on the well location. Portable chemical toilets will also be placed onsite for the crews. Arrangements will be made for the sewage to be transported from the wellsite to an approved disposal facility in the area.

Trash will be contained in a portable metal container and hauled periodically to the Evanston landfill.

8. ANCILLARY FACILITIES

Due to the proximity of available housing the only ancillary facilities needed will be four trailers to be placed on the drillsite to house the drill rep, tool pusher, geologist and mud logger.

9. WELLSITE LAYOUT

Six to eight inches of topsoil will be removed from the location and stockpiled. Location of mud tanks, reserve, burn pit, and soil stockpiles will be located as shown on Exhibits B and C.

A ditch above the pad will be constructed to divert natural runoff around and away from the pad.

10. PLANS FOR RESTORATION OF SURFACE

After drilling when the pit is no longer needed, and fluids are removed and disposed of appropriately, the pit liner will be buried in place and the pit backfilled and returned to natural grade.

The well will be completed in early 1994. Rehabilitation will commence the following season. If the wellsite is to be abandoned, the exploratory well and the water source well will be plugged, all debris removed from the access and drill pad and the disturbed surface graded to approximately the original contours, topsoil replaced, water bars constructed as needed and revegetation would be done with an approved seed mix prescribed by the Forest Service.

11. SURFACE OWNERSHIP

The wellsite and access road are all on Forest Service owned surface. The operator shall contact the Forest Service office in Evanston, Wyoming at (307) 789-3194 between 24 and 48 hours prior to construction activities.

12. OTHER INFORMATION

A cultural resource inventory has been conducted and copies of the report will be sent to the Forest Service and SHPO.

Merchantable timber removed during construction will be purchased by Chevron and hauled off site.

Stumps and timber slash will be piled in pre-approved pits, burned and then buried. Slash may be used in approved places to trap sediment.

13. COMPANY REPRESENTATIVE

Mrs. J. F. NewVille
P. O. Box 599
Denver, Colorado 80201

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drillsite and access route; that I am familiar with the conditions which presently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and, that the work associated with the operations proposed herein will be performed by Chevron Production Company and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved.

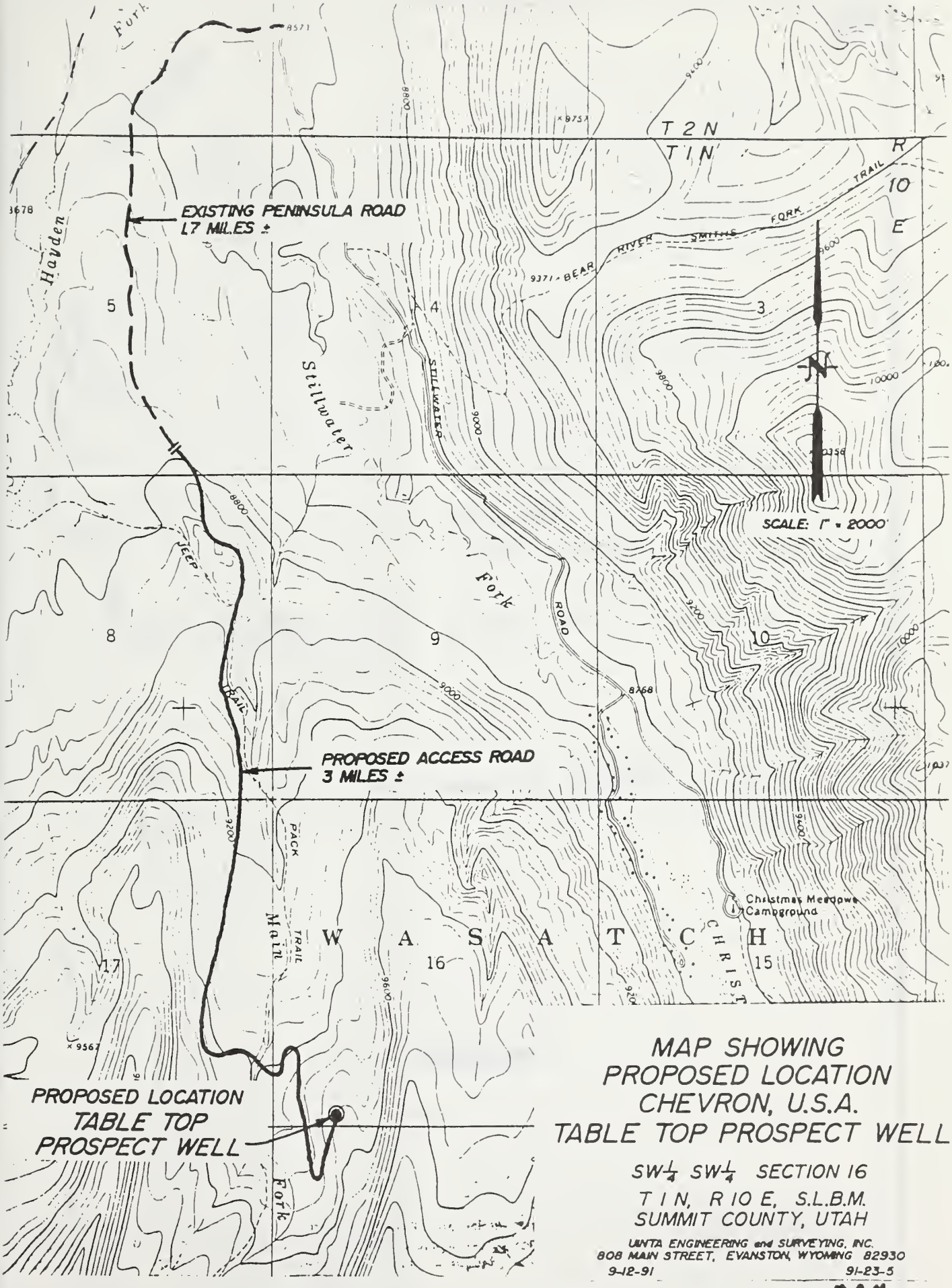
6/8/92
Date

J. F. NewVille
J. F. NewVille
Environment, Safety, Fire and Health Manager

JLW

Attachments:

Exhibit A - Proposed Location and Access
Exhibit B & C - Well Pad Layout
Exhibit D & E - Well Pad Cross Sections
Exhibit F - Drill Site Plan



MAP SHOWING PROPOSED LOCATION CHEVRON, U.S.A. TABLE TOP PROSPECT WELL

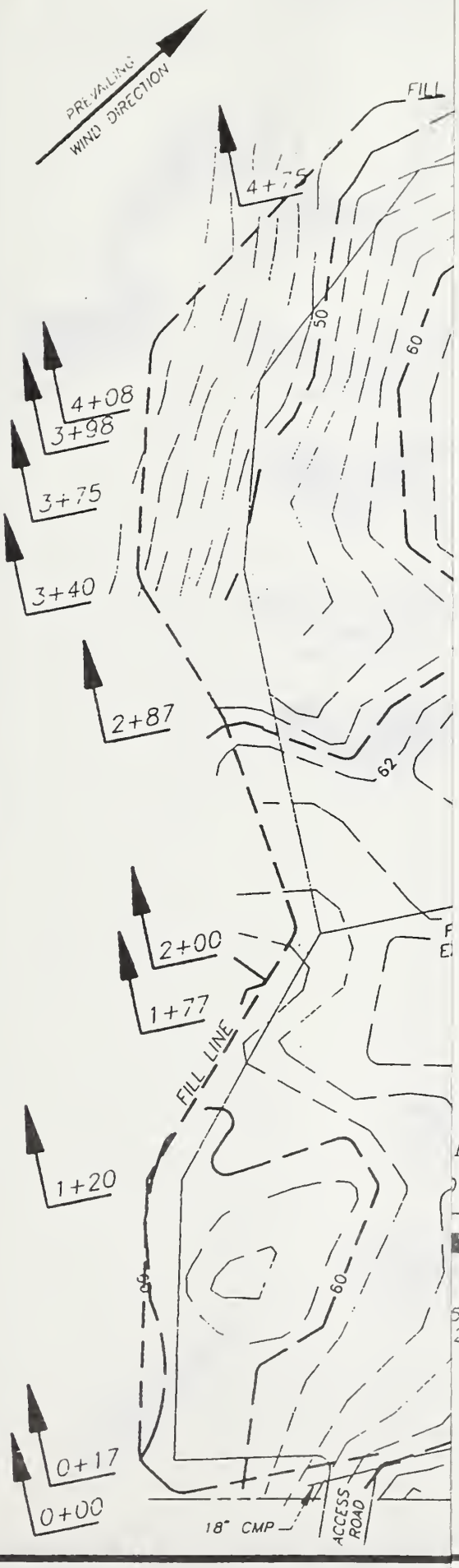
SW¼ SW¼ SECTION 16
T 1 N, R 10 E, S.L.B.M.
SUMMIT COUNTY, UTAH

UINTA ENGINEERING and SURVEYING, INC.
808 MAIN STREET, EVANSTON, WYOMING 82930

9-12-91 91-23-5

"A"

"B"



CHEVRON U.S.A.

TABLE TOP PROSPECT

(WELL PAD)

1961' FROM WEST LINE
244' FROM SOUTH LINE
SECTION 16, T3N, R16E, S.L.B.M.
SUMMIT COUNTY, UTAH

BASIS OF ELEVATION

ELEVATIONS BASED ON USGS SPOT ELEVATION 8768 LOCATED IN SW 1/4 SECTION 10, T3N, R16E, S.L.B.M.

FINISHED PAD ELEVATION TO BE 9568.0'

QUANTITIES

TOTAL EXCAVATION = 25,164 C.Y.
TOTAL EMBANKMENT = 24,884 C.Y.
TOTAL SPOIL = 280 C.Y.
TOTAL TOPSOIL = 3,230 C.Y.

RESERVE PIT CAPACITY = 10,660 C.Y. = 51,264 BBLS.
(INCLUDED IN ABOVE EXC. QUANTITY)

WELL PAD ELEVATION IS BASED ON A 1:1 EMBANKMENT VS. EXCAVATION RATIO.

EMBANKMENT SHALL BE PLACED IN LAYERS NOT TO EXCEED 6" - 8" AND SHALL BE COMPACTED WITH SHEEPFOOT TYPE ROLLER.

SURVEYED UNDER MY SUPERVISION IN JULY 1991

JOHN A. PROFFIT
Registered
2860
4/10/92

John A. Proffit

JOHN A. PROFFIT UTAH R.L.S. #2860

ALE

120

500'
2'

UINTA ENGINEERING & SURVEYING, INC.
808 MAIN STREET
EVANSTON, WYOMING 82930
(307) 789-3602

DISK # 071 FILE: TOPO
JOB # 91-23-05 DATE: 04-07-92



NOTES:

1) A SEDIMENT FILTER BELT OR EROSION CONTROL BLANKET SHALL BE PLACED AT TOE OF FILL. ALL SLOPES SLASH PRODUCED WHILE CLEARING WILL BE UTILIZED.

2) SEE PAGE 3 OF 5 FOR PAD LAYOUT DETAIL.

"B"

CHEVRON U.S.A.

TABLE TOP PROSPECT

(WELL PAD)

1161' FROM WEST LINE
244' FROM SOUTH LINE
SECTION 15, T3N, R19E, S.L.B.M.
SUMMIT COUNTY, UTAH

BASIS OF ELEVATION

ELEVATIONS BASED ON USGS SPOT ELEVATION 8768 LOCATED IN SW 1/4 SECTION 10, T3N, R19E, S.L.B.M.

FINISHED PAD ELEVATION TO BE 9568.0'

QUANTITIES

TOTAL EXCAVATION = 25,164 C.Y.
TOTAL EMBANKMENT = 24,884 C.Y.
TOTAL SPOIL = 280 C.Y.
TOTAL TOPSOIL = 3,230 C.Y.

RESERVE PIT CAPACITY = 10,660 C.Y. = 51,264 BBLS.
(INCLUDED IN ABOVE EXC. QUANTITY)

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EMBANKMENT SHALL BE PLACED IN LAYERS NOT TO EXCEED 6"- 8" AND SHALL BE COMPACTED WITH SHEEPFOOT TYPE ROLLER.

SURVEYED UNDER MY SUPERVISION IN JULY 1991

JOHN A. PROFFIT Registered 2860

John A. Proffit 4/10/92

JOHN A. PROFFIT UTAH R.L.S. #2860

UINTA ENGINEERING & SURVEYING, INC.
808 MAIN STREET
EVANSTON, WYOMING 82930
(307) 789-3602

DISK # 071 FILE: TOPO
JOB # 91-23-05 DATE: 04-07-92

"C"

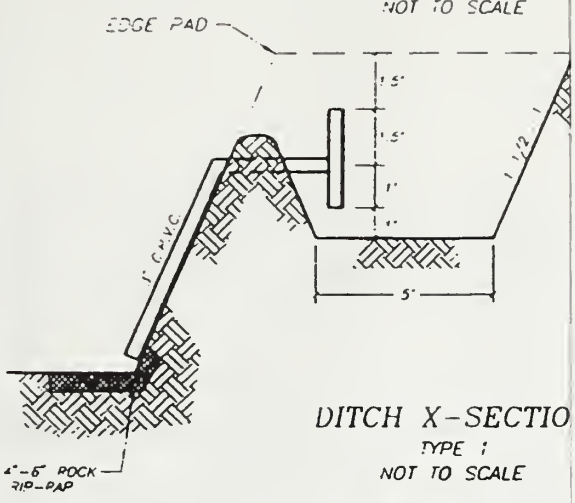
CHEVRON U.S.A.

TABLE TOP PROSPECT

(WELL PAD LAYOUT)

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DITCH X-SECTIO

TYPE 1

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DITCH X-SECTIO

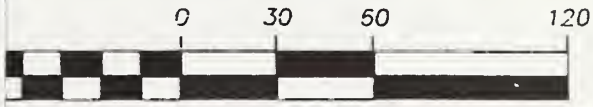
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GRAPHIC SCALE



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UINTA ENGINEERING & SURVEYING, INC.
808 MAIN STREET
EVANSTON, WYOMING 82930
(307) 789-3602

DISK #: 071 FILE: LAYOUT
JOB #: 91-23-05 DATE: 04-07-92

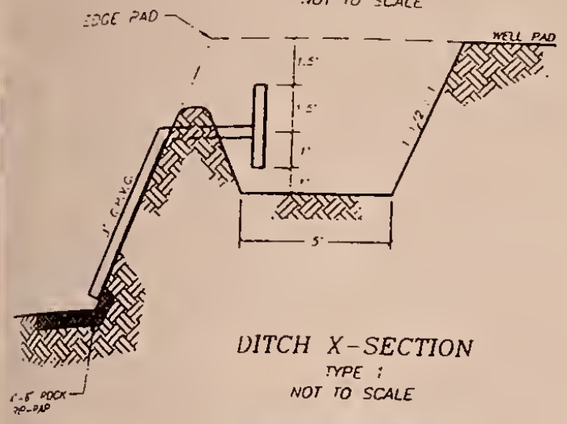
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CHEVRON U.S.A.

TABLE TOP PROSPECT

(WELL PAD LAYOUT)

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DITCH X-SECTION
TYPE 2
NOT TO SCALE





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GRAPHIC SCALE

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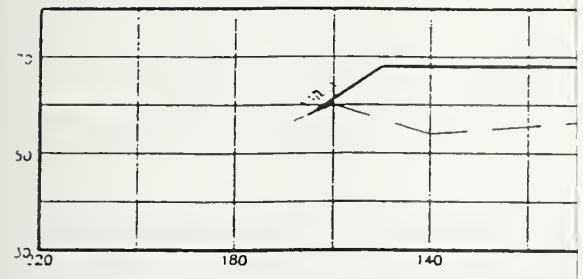
UINTA ENGINEERING & SURVEYING, INC.
808 MAIN STREET
EVANSTON, WYOMING 82930
(307) 789-3602

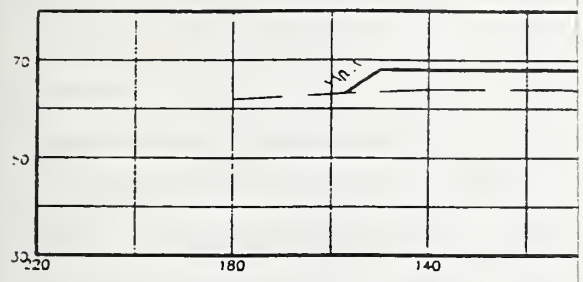
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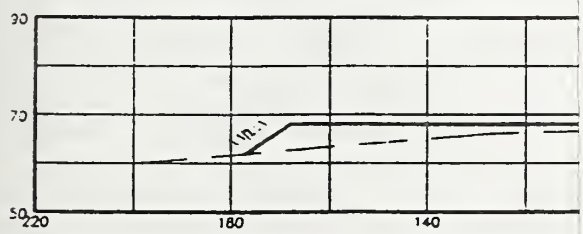
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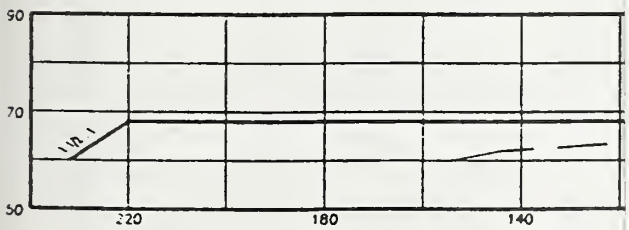
CHEVRON U.S.A.
TABLE TOP PROSPECT

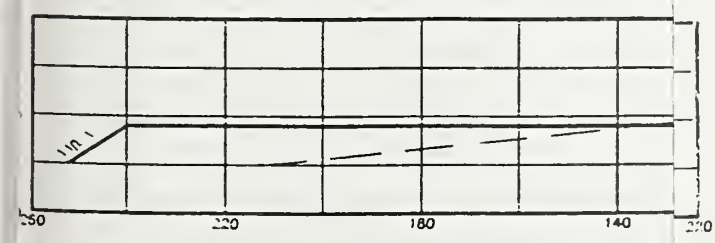
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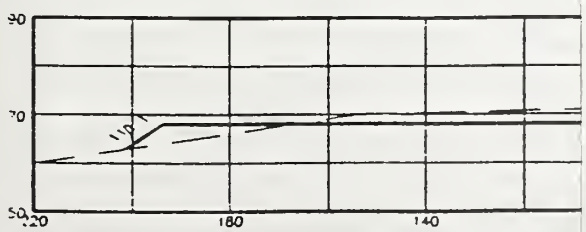












GRAPHIC SCALE



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UINTA ENGINEERING & SURVEYING, INC.
808 MAIN STREET
EVANSTON, WYOMING 82930
(307) 789-3602

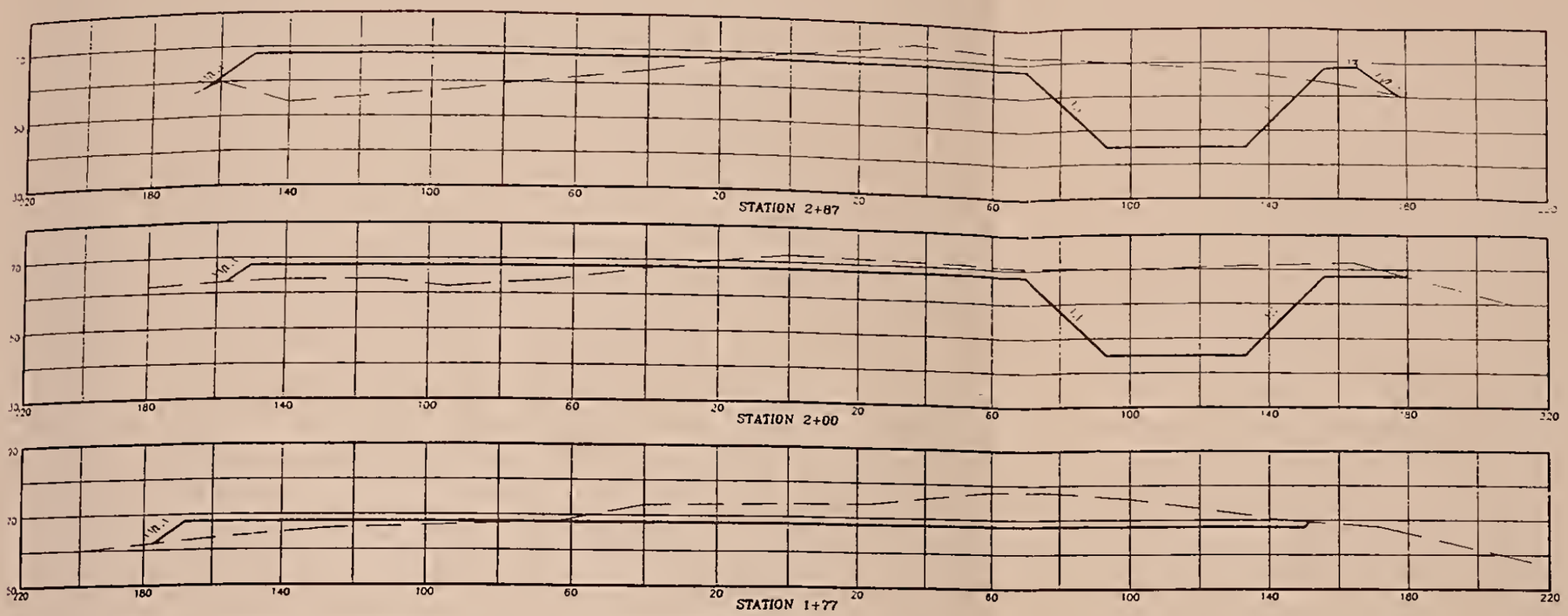
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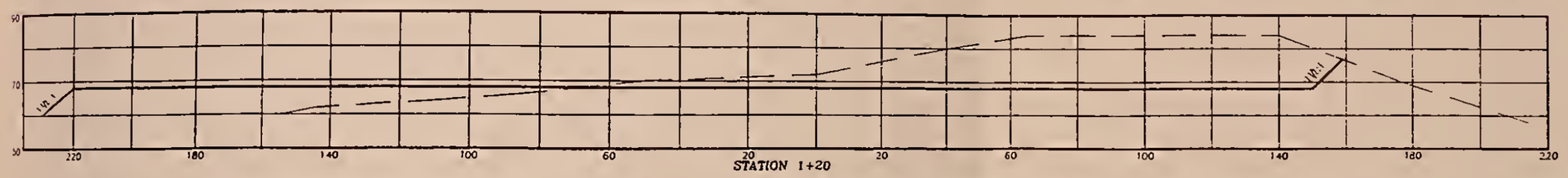
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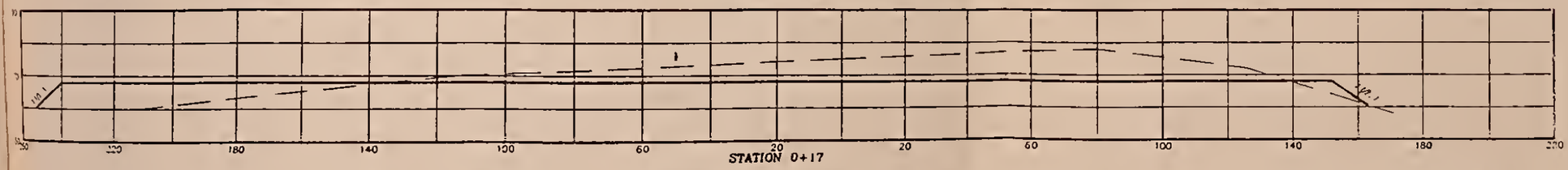
CHEVRON U.S.A.

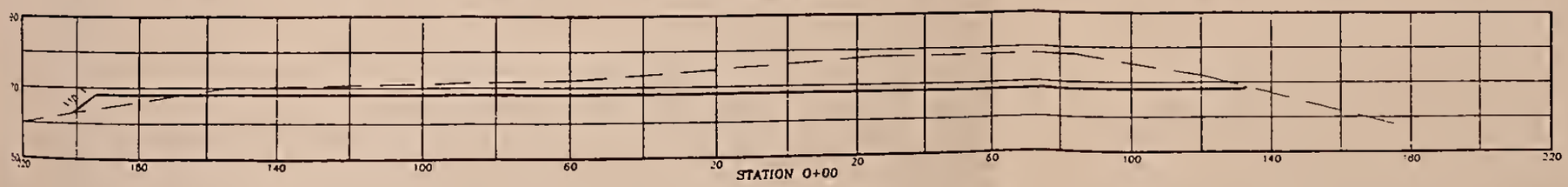
TABLE TOP PROSPECT

(WELL PAD X-SECTIONS)









GRAPHIC SCALE

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(IN FEET)

UINTA ENGINEERING & SURVEYING, INC.
808 MAIN STREET
EVANSTON, WYOMING 82930
(307) 789-3602

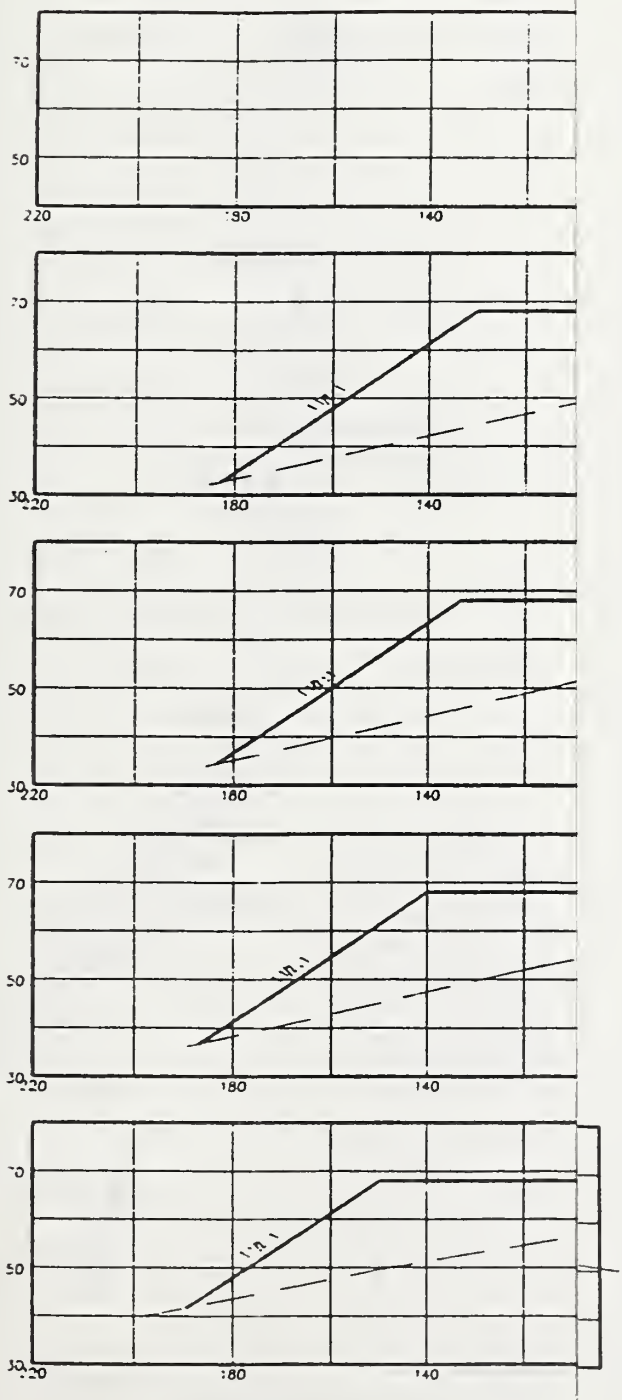
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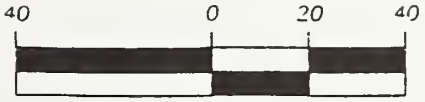
CHEVRON U.S.A.

TABLE TOP PROSPECT

(WELL PAD X-SECTIONS)



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(IN FEET)

JINTA ENGINEERING & SURVEYING, INC.
808 MAIN STREET
EVANSTON, WYOMING 82930
(307) 789-3602

DSK # 071 FILE: LAYOUT
JOB # 91-23-05 DATE: 03-08-92

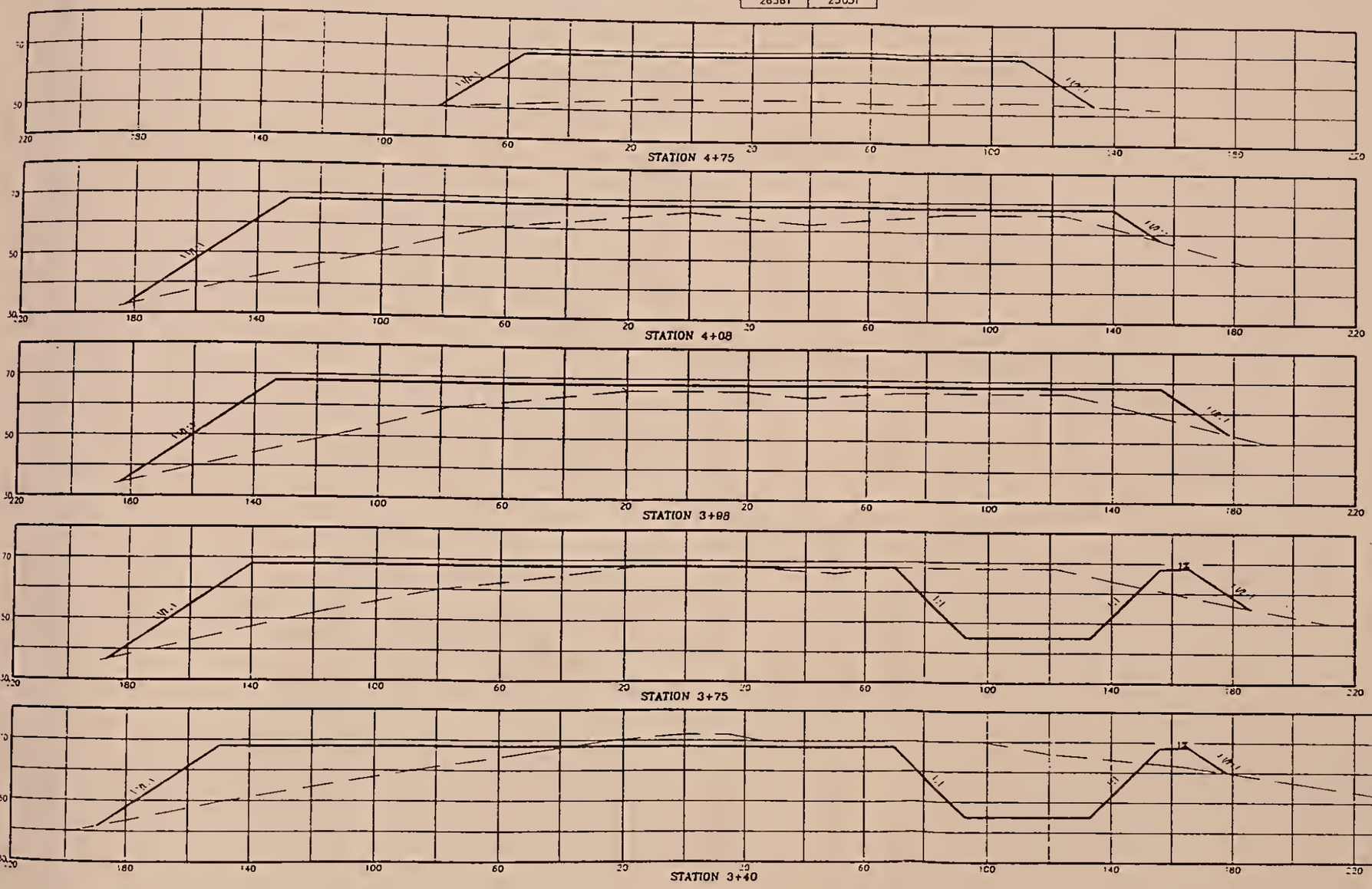
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CHEVRON U.S.A.

TABLE TOP PROSPECT

(WELL PAD X-SECTIONS)

STATION	AREAS in SQ FT		VOLUMES in CU. YDS	
	CUT	FILL	CUT	FILL
-0+30	0	0	379	38
0+00	1762	68	1239	220
0+17	1537	631	3192	2327
1+20	2233	904	3743	1201
1+77	1313	234	1432	296
2+00	2050	461	6244	2809
2+87	1825	1283	3414	2729
3+40	1653	1498	1944	2156
3+75	1347	1829	574	1769
3+98	0	2325	0	897
4+08	0	2521	0	6681
4+75	0	2864	0	1326
5+00	0	0	26561	23051



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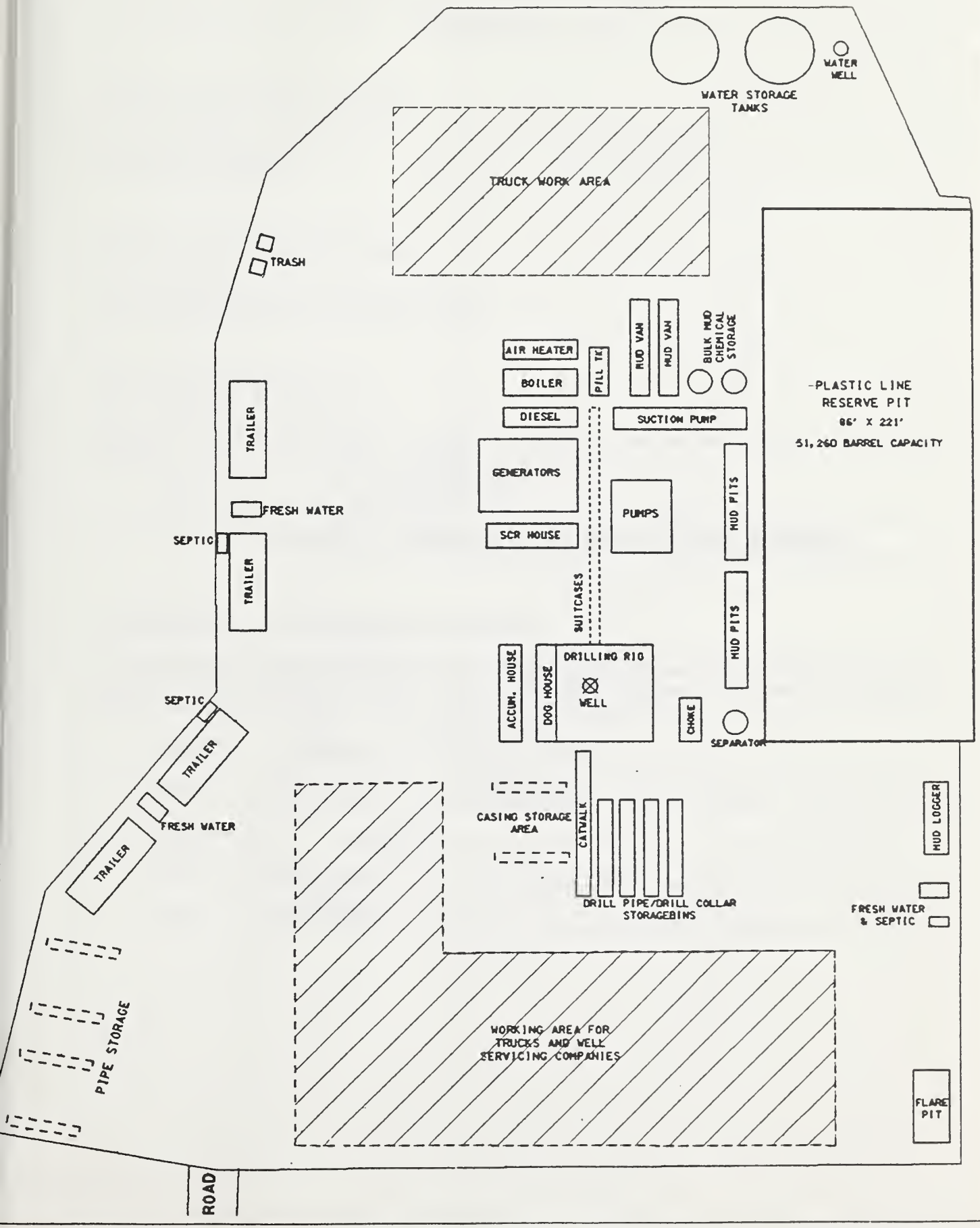
JINTA ENGINEERING & SURVEYING, INC.
808 MAIN STREET
EVANSTON, WYOMING 82930
(307) 789-3602

DSK #: 071 FILE: LAYOUT
.08 #: 91-23-05 DATE: 03-08-92

"F"

TABLE TOP DRILLING SITE PLAN

SCALE: 1" = 50'



SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN

OIL DRILLING AND WORKOVER OPERATIONS

CHEVRON U.S.A. INC.

STREET AND MAILING ADDRESS

P. O. BOX 599
DENVER, CO 80201

FACILITY RESPONSIBLE PERSON

B. L. HAYNES
DENVER DIVISION DRILLING MANAGER

MANAGEMENT APPROVAL

This SPCC Plan for oil drilling and workover operations will be implemented as described herein.

Signature: B. L. Haynes

Name and Title: B.L. HAYNES, DIVISION DRILLING MANAGER

PROFESSIONAL ENGINEER'S CERTIFICATION

I have examined Chevron oil drilling and workover operations and am familiar with the provisions of 40 CFR PART 112. This Plan has been prepared in accordance with good engineering practice and the requirements of 40 CFR PART 112.7.

Signature: George L. Kirkland

Name: GEORGE L. KIRKLAND

Registration No.: 16784

State: LOUISIANA

Date: 6/17/88

DA1118

GENERAL

This SPCC Plan has been prepared to conform with the requirements of 40 CFR Part 112 - Oil Pollution Prevention.

A. Spill Experience (40 CFR 112.7(a))

This rig has not experienced any spill events within the twelve months preceding July 1, 1988, while under contract to Chevron. ("Spill event" as defined in 40 CFR Part 112.2 (i) is a discharge of oil into or upon the navigable waters of the United States or adjoining shorelines in harmful quantities.)

B. Potential Spills (40 CFR 112.7(b))

The reasonably expected modes of major failure or accident in which diesel fuel could be spilled from the facility are the following:

1. Diesel Tank Leak or Failure

(i) Rate of flow: Variable - Depends on the size and location of the tank failure.

(ii) Total quantity of oil which could be discharged: The total quantity of oil that could be discharged would not exceed the working capacity of the largest tank which is normally 100 barrels.

(iii) Direction of flow: Drainage would be contained within the firewall dike around the tank or channeled to the reserve pit.

2. Diesel Tank Overflow

There is a reasonable potential for tank overflow resulting from failure of overfill protection equipment while being filled by delivery truck.

(i) Rate of flow: Not greater than 3 bbls. per minute, based on the average maximum delivery rate into tankage.

(ii) Total quantity of oil which could be discharged: Variable. The total quantity spilled is proportional to the length of time the tank is overflowing.

(iii) Direction of flow: Drainage would be contained within firewall dikes or channeled to the reserve pit.

3. Not applicable.

4. Not applicable.

5. Not applicable.

C. CONTAINMENT, DRAINAGE CONTROL AND DIVERSIONARY STRUCTURES (40 CFR 112.7(c))

The following secondary containment and diversionary structures to prevent oil discharges from reaching a navigable water course are provided:

Area	Containment
Diesel Tanks	Diking around perimeter of tank batteries which forms impoundment basins sized to hold the contents of the largest tank, plus enough freeboard to allow for precipitation, or channeling to reserve pit.

The secondary containment systems are sufficiently impervious to contain spilled oil until it can be removed.

D. DEMONSTRATION OF IMPRACTICABILITY (40 CFR 112.7(d))

Not applicable.

E. SPECIFIC REQUIREMENTS (40 CFR 112.7(e))

1. Not applicable.

2. Not applicable.

3. Not applicable.

4. Not applicable.

5. Not applicable.

6. Oil Drilling and Workover Facilities (onshore)

   (i) Mobile drilling and workover equipment is positioned to prevent spilled oil from reaching navigable waters.

   (ii) Where necessary, catchment basins or diversion structures are constructed to intercept and contain spills of fuel, crude oil or oily drilling fluids.

   (iii) Before drilling below any casing string or during workover operations, a Blowout Prevention (BOP) assembly and well control system is installed that is capable of controlling any anticipated pressure. Casing and BOP installations are in accordance with state and federal requirements.

7. Not applicable

8. Inspection and records

Inspections and BOP tests are in accordance with written procedures developed for drilling and workover operations by Chevron. All "spill events" are recorded on Company Form GO-140 and Federal Form NTL-3A and reported as required to the appropriate agencies.

9. Not applicable

10. Training

The Drilling Representative is responsible for making sure that personnel are familiar with the SPCC Plan, applicable laws and reporting procedures, as well as the operation and maintenance of equipment. The SPCC Plan is covered periodically at Safety Meetings where potential spills are discussed and action plans are reviewed. When a spill has occurred, including non-reportable types, the actual response is analyzed for improvements.

The Drilling Representative is responsible for oil spill prevention and reports to line management.

APPENDIX C- ROAD CONSTRUCTION CRITERIA

LETTER HEADS
MEMO4

Abbreviated 7700-41 (05/91)

WASATCH-CACHE NATIONAL FOREST ROAD USE PERMIT ABBREVIATED FOR ROAD MAINTENANCE	Authority: Acts of 6/30/14, 4/24/50, 6/12/60 and 10/14/64; (16 U.S.C. 498, 572, 530 and 532-38 AND 43 U.S.C. 1702, 1761, 1764, AND 1765)

CHEVRON, U.S.A. (Name) of 6400 Fiddler Green Circle, Englewood, CO 80111 (Address & Zip Code)
(hereafter called the permittee) is hereby granted use of the following road(s) or road segments:

Stillwater Road #057, 0.8 miles from S.H.-150 to junction with Peninsula Road #306

Peninsula Road #306, 2.1 miles

on the Evanston Ranger District, Wasatch-Cache National Forest, subject to the provisions of this permit.

The exercise of any of the privileges granted in this permit constitutes acceptance of all the conditions of the permit.

Rate for sharing maintenance is shown in Clause 9.

3. **USE PLANS.** Two weeks prior to beginning use or work the, permittee shall notify the District Ranger in writing of the approximate time when such use will commence, the anticipated duration of such use, the names and addresses of permittee's contractors or agents who will use the road on behalf of permittee, the estimated extent of use, and such other information relative to permittee's anticipated use as the Forest Service may from time to time reasonably request. If and when during the year there is any significant change with respect to the information so supplied by permittee, the permittee will notify the District Ranger promptly in writing of such change. Plans and changes will be approved by the District Ranger before use may commence.

6. **USE NON-EXCLUSIVE.** The privileges granted in this permit to use this road are not exclusive. The Forest Service may use this road and authorize others to use it at any and all times. The permittee shall use said road in such manner as will not unreasonably or unnecessarily interfere with the use thereof by other authorized persons, including Forest Service.

7. **RULES GOVERNING USE.** The permittee, its agents, employees, contractors or employees of contractors, shall comply with all reasonable rules prescribed by the Forest Service for control and safety in the use of this road and to avoid undue damage to the road. Such rules will include:

(1) Upon reasonable notice, closing the road or restricting its use when, due to weather conditions or the making of alterations or repairs, unrestricted use would in Forest Service judgement, cause excessive damage, or create hazardous conditions;

(2) Upon reasonable notice, closing the road during periods when, in Forest Service judgement, there is extraordinary fire danger;

(3) Traffic controls, which in Forest Service judgement, are required for safe and effective use of the road by authorized users thereof;

(7) Regulation of the number of vehicles so as to prevent undue congestion of this road.

(8) The Permittee shall not use an "active ingredient" as defined in Section 2 of the Federal Insecticide Fungicide, and Rodenticide Act, as amended (86 Stat. 973), in violation of said act on the Land described in this permit.

(9) Other - Specify (Optional)

8. **INSURANCE.** Permittee or his contractors and assigns shall be required to carry public liability and property damage insurance for the operation of vehicles in the amounts established by applicable state laws, cooperative agreements, or easements issued on the subject road or roads. In any event, the permittee must carry liability insurance and property damage insurance of not less than $100,000 for injury or death to one person, $300,000 for injury or death to two or more persons, and $100,000 for damage to property. The permittee itself shal be responsible for furnishing to the District Ranger proof of satisfactory insurance when said insurance is to be furnished by other than the permittee. Proof of satisfactory insurance may be required by the Forest Service prior to hauling over the road(s) and will be for the duration of the permit and such insurance policy shall bear an endorsement requiring the issuing company to give 10 days prior written notice to the District Ranger, of cancellation or material change.

ATTACHMENT "A"

Stillwater Road #057: 0.8 miles Reconstruction, Restoration Specifications

Clearing & Grubbing

See typical section. Scatter so as to not be noticeable or pile and burn.

Topsoil

Remove and stockpile at a designated area adjacent to road, or windrow along side of road. Following completion of grading work spread in ditch areas to uniform depth.

Grading

See typical section. For staking purposes assume a subgrade elevation 1.0 ft. above the existing road.

Vary ditch depth between 2 and 2.5 feet as needed to obtain embankment, facilitate drainage, and maintain a reasonably uniform road grade.

Following rough grading modify ditch inslope as needed to maintain a 18 ft. subgrade width.

Shift alignment as needed to maintain 2 ft. of cover over existing 4" PVC water line buried along east side of road. Check with F.S. for exact location and depth of pipe crossing road to the Stillwater Campground.

Incorporate existing rock windrows in fill. Rock from windrows and ditch excavation too large to be used in the fill will be scattered outside the clearing limits. Rock which cannot be scattered with minimal disturbance to the vegetation shall be hauled to a designated disposal site within one mile of the work area. Subgrade shall be roller compacted at optimum moisture content. The surface shall be reasonably uniform, with no water ponding depressions. No rocks shall protrude from the subgrade more than one-half the surfacing thickness.

Surfacing

Surface with 4 inch (compacted depth) of evenly graded -2 inch crushed or screened rock from the designated materials source. Surfacing shall be roller compacted at optimum moisture content.

Seed & Fertilizer

Revegetate all disturbed areas outside the travelway using the indicated proportions of certified pure live weed free seed. Seed shall be applied spring or fall as approached by FS fertilizer amounts and application frequency shall be determined from the analysis of conserved topsoil conducted by the permittee. Revegetation/soil stabilization is not going to be successful without an aggressive soil analysis, seeding, and mulching operation. The objective is to get the disturbed soils stabilized with vegetation as soon as possible. Many methods are available to the permittee. Road cuts and fills require methods which will keep the fertilizer, seed, and mulch on the slopes.

Species	Lbs/acre Broadcast
Timothy	5
Intermediate wheatgrass	10
Smooth brome	10
Orchard grass	10
Red mammoth clover	2.5
Dutch white clover	2.5
	40.0

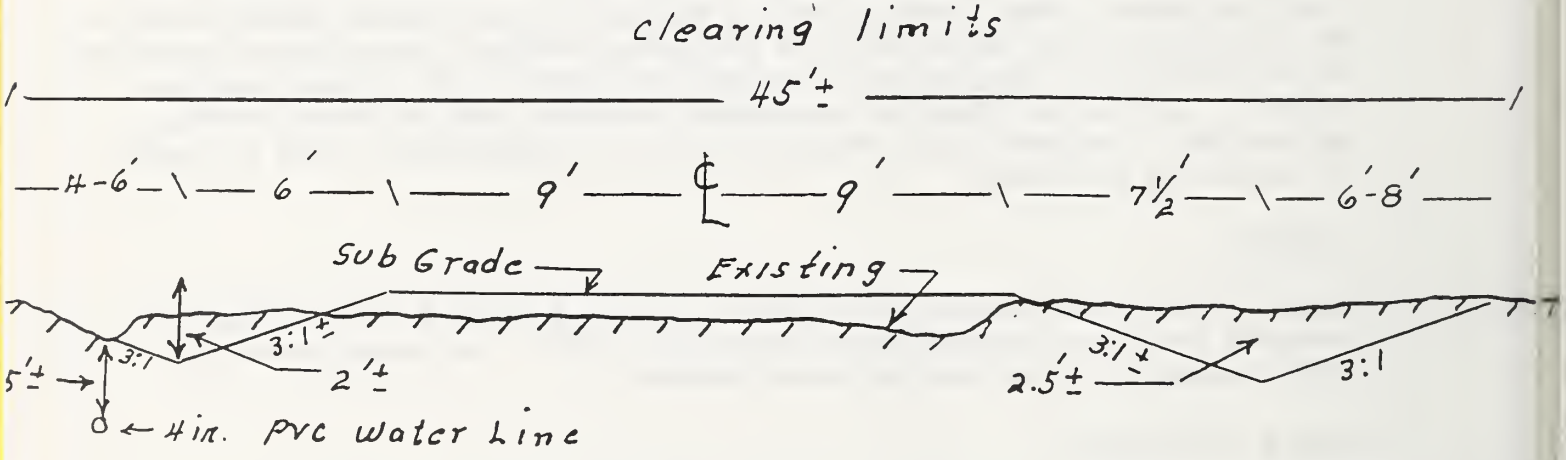
Seed amounts applied with a drill or during hydro mulching are usually half of that when broadcast

Traffic Maintenance

Traffic delays through the work area shall not exceed one hour. Forest Service shall be advised two days in advance of delays exceeding one hour. In no case shall delays exceed four hours.

Quality Control

The permittee shall have a representative present when work is in progress to insure the terms of this permit are met. This representative shall have full authority to act on behalf of the permittee.



Clearing width will vary with ditch depth

TYPICAL SECTION

Peninsula Road #306: 2.1 miles Reconstruction, Betterment Specifications

Clearing

Remove and scatter all vegetation and stumps that encroach on the area between the bottom of the cut and 5 feet beyond the fill shoulder.

Grading

Lower grade as needed to obtain a minimum subgrade width of 14 feet in ditch sections and 16 feet where ditch is reclaimed. Strike off fill shoulder in over width areas (not needed for curve widening or turnouts) to yield a 16 foot subgrade.

Blade existing rock burn and oversize rock resulting from this work over the fill shoulder. In flat areas scatter the rock five feet beyond the fill shoulder.

Fill isolated pot holes with borrow or gravel. Remove individual large rock which protrude more than two (2) inches above the road surface. Fill the resulting holes with borrow or gravel. Areas containing numerous protruding rock may be graded to remove rock, or surfacing depth increased so that no rock protrudes from the subgrade more than one-half surfacing thickness.

Alignment Changes

Horizontal alignment may be altered to accommodate truck traffic in several areas. These areas are approximately 200 and 250 feet in length. Where curve widening is necessary avoid disturbing the cut slopes to obtain the additional width. Where possible obtain width by lowering grade.

Turnouts

Average spacing shall be 1,000 feet. to gain additional width required for turnouts, utilize existing wide areas, import borrow or lower grade. Keep cut slope disturbance to a minimum. Turnouts will be approximately six feet wide, 50 feet long with 25 feet transitions.

Drainage

Extend and clean existing culverts as needed to maintain drainage. Crush ends or remove all non functioning culverts.

Construct dips at 400 feet intervals on sustained grades of 6 percent and greater.

Pull ditch and reconstruct catch basins as needed for drainage of surface or subsurface water intercepted by the road prism.

Surfacing

Finished surfacing width shall be 12 to 14 feet. Vary surfacing slope to obtain an effective compacted depth of 4 inches. Compact with hauling equipment or roller at optimum moisture content. Material produced from the peninsula pit shall be 2 inches or smaller, evenly graded crushed or screened gravel.

Seeding & Fertilizing

Vegetate all disturbed areas outside the travel way as specified for the Main Fork Road.

Bridge

Construct 25 foot long asphalt plant mix approach transitions. Place at the temperature recommended by the supplier to a 4 inch compacted depth. The atmospheric temperature shall be 55° and rising. Prior to spreading plant mix the subgrade surface shall be uniform with no protruding rock. Disturbed or imported material shall be compacted. Finished pavement elevation shall be 1/2 inch ± higher than the bridge deck where they meet.

Quality Control

The permittee shall have a representative present when work is in progress to insure the terms of this permit are met. This representative shall have full authority to act on behalf of the permittee.

ATTACHMENT B

ROAD MAINTENANCE CLAUSES

CT5.4 Road Maintenance. (11/72) Road maintenance is defined as the performance of work on the entire road facility commensurate with Permittee's use. This work consists of restoration and preservation of surface, shoulders, roadsides, structures, drainage, sight distance, and such traffic control devices as are necessary for prevention of excessive erosion damage to the facility and adjacent lands.

1. Description. Maintenance work to be done currently during the periods of use by Permittee shall include:

   A. Removal of slides, fallen timber, boulders, and overhanging brush which obstruct safe sight distance.

   B. Adequate blading and shaping of roadway surfaces and ditches to maintain the original cross sections.

   C. Removal of earth and debris from ditches and culverts so that the drainage systems will function efficiently at all times.

   D. Prevention of excessive dusting of road surface materials.

   E. Repair of project's traffic damage to fences, cattle guards, culverts, bridges, and other roadway structures including traffic regulatory and directional signs, paving strips and delineators.

   F. Restoration of eroded fills, repair and stabilized waterways, vegetated slopes, and other erosion control features.

   G. Removal of snow from roadway surface.

2. Performance. All items of maintenance work shall be done currently as necessary to insure safe, efficient transportation and to protect roads, streams, and adjacent lands from excessive damage. Work shall be done in accordance with the following minimum standards of performance:

   A. Removal of Material. Earth, rocks, trees, brush, and debris removed from roadways and ditches shall not be deposited in stream channels or upon slope stabilization and erosion control features.

   B. During roadway blading and shaping operations, banks shall not be undercut; care shall be taken to ensure gravel or other selected surfacing material will not be bladed off the roadway surface. The original crown or slope of the road shall be preserved. Mud, debris, and oversize material shall be deposited outside the roadway by hand or by careful blading, and these materials shall not be mixed with the road surfacing material.

C. Ditches, culverts, drop inlets, trash racks, downspouts and splatter structures shall be kept clear of earth, slash, and other debris so that drainage systems will function efficiently during, and immediately following, periods of road use by Purchaser. This includes correcting and eliminating causes of erosion or plugging of the structure and actual repair of the structure and riprap if damaged.

D. When conditions are such that dusting results in hazardous driving conditions or there is an appreciable loss of road surface or binder material, Purchaser shall control such dusting by sprinkling or such other method as may be agreed upon by Purchaser and Forest Service.

E. Purchaser shall promptly repair all damages, caused by Purchaser's Operations, to the road surface or to any structures in or adjacent to the roadways. Holes in asphalt-surfaced roads and asphalt dikes shall be repaired by cleaning and priming, producing, delivering, and placing the patching mix and all other work incidental to repair of the hole.

F. Any washing or settling of roadway fills shall be corrected promptly to prevent additional soil erosion or roadway damage. Shoulder berms, berm outlets, and stabilized waterways shall be protected during road maintenance operations and, if damaged, such structures shall be promptly restored to their original condition including repair and reseeding of vegetation established to control slope erosion. No earth, rocks, or other debris shall be deposited upon any roadside slope stabilization structure or feature.

G. Snow shall be removed during Purchaser's Operations by plowing it from the roadway in a manner that will preserve the road surface, permit proper drainage, and protect adjacent resources.

ATTACHMENT C

STANDARD SNOW REMOVAL CLAUSE

21.1 Removal of snow from entire road surface width including turnouts.

21.2 Removal of snow slides, earth slides, fallen timber, and boulders that obstruct normal road surface width.

21.3 Removal of snow, ice, and debris from culverts so that the drainage system will function efficiently at all times.

21.4 All items of snow removal shall be done currently as necessary to insure safe, efficient transportation. Work shall be done in accordance with the following minimum standards of performance:

21.5 Removal of material. All debris, except snow and ice, that is removed from the road surface and ditches shall be deposited away from stream channels at agreed locations.

21.6 During snow removal operations, banks shall not be undercut and care shall be taken to ensure that gravel or other select surfacing material will not be bladed off the roadway surface.

21.7 Ditches and culverts shall be kept functional during and following roadway use.

21.8 Snow berms shall not be left on the road surface. Berms left on the shoulder of road shall be removed and/or drainage holes shall be opened and maintained. Drainage holes shall be spaced as required to obtain satisfactory surface drainage without discharge on erodible fills.

21.9 Dozers shall not be used to plow snow on system roads without written approval of Forest Service.

21.10 A minimum of two inches compacted snow depth shall be maintained on the Stillwater and peninsula road up to the bridge.

21.11 Permittee's damage from, or as a result of, snow removal shall be restored in a timely manner.

ROAD DESIGN STANDARDS

PERMITTEE SURVEY, DESIGN & CONSTRUCTION

WASATCH-CACHE NATIONAL FOREST

EVANSTON RANGER DISTRICT

PROJECT:

Table Top Creek Prospect Chevron Federal 1-16

ROAD: Name-Main Fork

* Number-80119

Functional Classification-Local

Construction- 0.8 Miles

Reconstruction- 2.0 Miles

Name-

Number-

Functional Classification-

Construction- Miles

Reconstruction- Miles

Prepared By	Date
Harold Perry, Chevron U.S.A.	12/19/91
Stan Taggart, Uinta Engr.	"
Bernard Asay, Forest Service	"
By Hoffman, Forest Service	"
Jim Wheeler, Forest Service	01/08/92
Approved By	Date

The information here-in is subject to revision as the project developes. Revisions will be approved by the preparing and approving parties.

LOCATION: FS will approve the flag line before any survey work is done. The staked "L" line will not depart from the flag line more than five foot, unless approved by FS.

SURVEY CLASS: (Table 4-1, Oil & Gas Roading Guidlines). "E - F"

SPECIFICATIONS: All work shall conform to the applicable section of the "Forest Service Specifications for Construction of Roads and Miner Drainage Structures" EM-7720-100R". All references are to these specifications unless designated otherwise. All work shall conform to the applicable sections of these specifications; except as follows:

CROSSSECTION AND SLOPE STAKE PRECISION (Page 42): "E" (Standard Specs)

CONSTRUCTION: (Tolerance F (page 66) Standard Specs
The permittee shall have a responsible representative present at all times with the authority to act on behalf of the permittee.

QUALITY CONTROL: The permittee shall provide a quality assurance and control service to assure the specifications and all permit provisions are followed.

(Refer to "CONSTRUCTION" above.)

ROAD CLOSURE/REVEGETATION:
Reclaim 2.5 miles ± of existing road - Water Bar, scarify and revegetate using designated mix. Install rock barriers and *sign at Hayden Fork Crossing. Restrict access from reconstructed road with rock barriers.

MAINTENANCE FOR TRAFFIC:

N/A

SURVEY CONTROL POINTS: The permittee shall be responsible for the preservation of all survey controll points.

CONSTRUCTION STAKES: The permittee/contractor shall preservue all construction stakes, and shall be responsible for any mistakes that result from their loss.

*Sign to be determined

PLANS: Plans must be approved by the FS. THE APPROVAL PROCESS WILL INCLUDE A PLAN-IN-HAND review. Plans may be either line diagram, or plan and profile and shall include as a minimum:

An accurate 1 in = 1,000 ft plot on an enlarged USGS Quad.
Road grade.
Clearing and seeding limits and quantities.
Excavation and embankment quantities indicating self balance sections and balance points.
Typical sections.
Standard drawings (FS or approved).
Turnouts and other variations to the standard template.
Drainage structures.
Signs, cattle guards and other minor structures.

DESIGN SPEED: 20 MPH

TRAFFIC SERVICE LEVEL: (Table 5-1 O&GRG). C/D

TRAVEL WAY WIDTH: 14 ft

MINIMUM CURVE RADIUS: 70 ft

GRADES Sustained 8 %; Piches 10 %; 300 Ft.

CURVE WIDENING:
Funtion of delta & radius for a Low Boy tractor trailer.

FILL WIDENING:
None for fills less than five feet high, one foot for fills over five foot.

TURNOUTS:
Intervisible No , Max Spacing 1,000 Ft , Minimum spacing, 500 Ft Width 6 Ft , Length 50 ft , Transition 50 ft , closer spacing to be approved by FS.

CLEARING & GRUBBING:
Clear 3 ft beyond top of cut, clear to toe of fill or minimum of 5 ft from shoulder. Grub between cut stake and fill shoulder, stumps outside the fill shoulder and one foot below grade may be cut to maximum height of 6".

MERCHANTABLE TIMBER:

Purchased by Chevron and removed from Forest.

SLASH TREATMENT METHODS:
Tops and Limbs - burn in slash disposal pits with stumps and bury residue. Where applicable, some slash may be used to construct slash filter windrows and in the reclamation of the existing road.

Logs - Same as slash.

Stumps - Haul to designated disposal site. Burn in pit and bury residue. Burn pit spacing shall average five per mile.

TOP SOIL:
Large rocks make conserving top soil practically impossible. An aggressive program of soil sampling/fertilizing, seeding, and mulching will be carried out instead. (refer to "Seeding & Mulching").

ROADWAY EXCAVATION: All excavation, unless approved by the FS as unsuitable or designated for a special use, will be utilized within the designated embankment limits. Large oversize rock may be wasted along the toe of the fill if they do not create a continuous windrow and are a minimum of 5' from shoulder and one foot below shoulder grade. Oversize rock that can not be wasted in this manner shall be hauled to fills that will accommodate them.

BORROW EXCAVATION:
Borrow from well site to make fill for curve below site. Indicate excavation and embankment yards on well site and road plans.

EMBANKMENT: Placement method side cast Compaction method _____

FINISHING ROADBED:

No rock shall protrude more than two inches above subgrade.

SLOPE ROUNDING:
N/A

RECONDITIONING EXISTING ROAD BED:

N/A

DIPS (DRW - WC001): Maximum Spacing for Grades 0 to 3% N/A, 4 to 6% 600 ft, 7 to 8% 400 ft, 8%+ 400 ft. Drawing to be amended by Forest Service to include slash filtration area.

DITCH RELEIF CULVERTS (DRW-FR 3810, 3701, 5901)

Minimum Size 18" ; Use 90° elbows in lieu of catch basins in cuts over 5 ft.

Maximum spacing for Grades: N/A

0 to 3% _____, 4 to 6% _____, 7 to 8% _____, 8%+_____.

THROUGH DRAINAGE CULVERTS (DRW-FR 3810, 3701)

Minimum Size 24" .

SURFACING:

Type - Minus 2" evenly graded crushed gravel

Additive - None

Compaction Method - Hauling equipment at optimum moisture content.

Source - End of Peninsula Road.

Type -

Additive -

Compaction Method -

Source -

type	location
-2" gravel, 4" compacted depth	entire road length

SEEDING & MULCHING: (Certified Weed Free)

Where - Cut and fill of new construction, stump disposal sites all disturbed areas and obliterated sections of existing road.

Method - Without topsoil, revegetation/soil stabilization is not going to be successful without an aggressive soil analysis, seeding, and mulching operation. The objective is to get the disturbed soils stabilized with vegetation as soon as possible. Many methods are available to the permittee from which to choose. Steep road cuts require methods which will keep the fertilizer, seed, and mulch on the cut and not running down the ditch.

Application Period - Spring or fall as approved by FS

Fertilizer - To be determined by soil analyses conducted by the permittee.

species	lbs/acre (pure live seed)
Timothy	5
Intermediate wheatgrass	10
Smooth brome	10
Orchard grass	10
Red mammoth clover	2.5
Dutch white clover	2.5
	40 (broadcast)*

*(Seed amounts applied with a drill or during hydro mulching are usually half of that when broadcast.)

SIGNS:

One "Single Lane Road with Turnouts, Please Drive Carefully" 45"x27" sign 3" letters (black on yellow). Install vicinity of junction with Stillwater road.

One 24" "Stop Sign" at junction with Stillwater Road.

Three road closure signs for obliterated sections of existing road. FS will furnish sign specifications at a later date.

ROAD CLOSURE DEVICE:

12 to 16 ft stock gate installed west end of Main Fork bridge. The gate shall include two type one barricade markers and an "Authorized use only" sign.

CATTLE GUARDS (DRW-FR 4601):

N/A

OTHER: Main Fork bridge will be set on treated timber or concrete sills. The sills will be a minimum of five foot behind existing stream bank. Rip rap stream bank as needed to insure stability. Chevron will furnish bridge site plan design for FS approval.

INCIDENTIAL CONSTRUCTION:

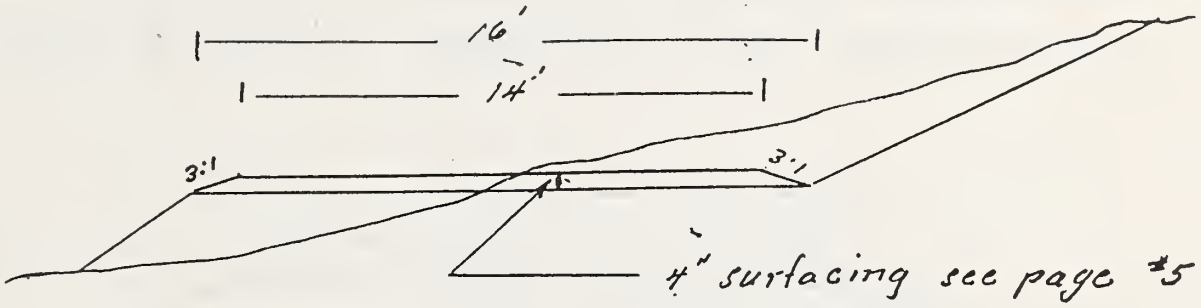
Cross wet area below beaver pond with 2' to 3' deep french drain. Use fabric above and below rock with 6" fill over rock. Install 24" pipe in the existing drainage channel.

ENVIRONMENTAL FACTORS:

Covered in EIS.

TYPICAL SECTION
SIDE SLOPES GREATER THAN 13%

Clearing Limits: SEE PAGE THREE



_____% Inslope

0 % Outslope

Ditch Depth 1'

Ditch Inslope 3:1

Cut Slope Ratio	
2:1	0 to 5 Ft
1 1/2:1	5 to 10 Ft
1:1	Over 10 Ft

Fill Slope Ratio
all slopes 1 1/2:1

Remarks:

Ditch not incorporated in road design. Use if road cuts intercept water.

TYPICAL SECTION
SIDE SLOPES 0 TO 13 %

Clearing Limits: SEE PAGE 3

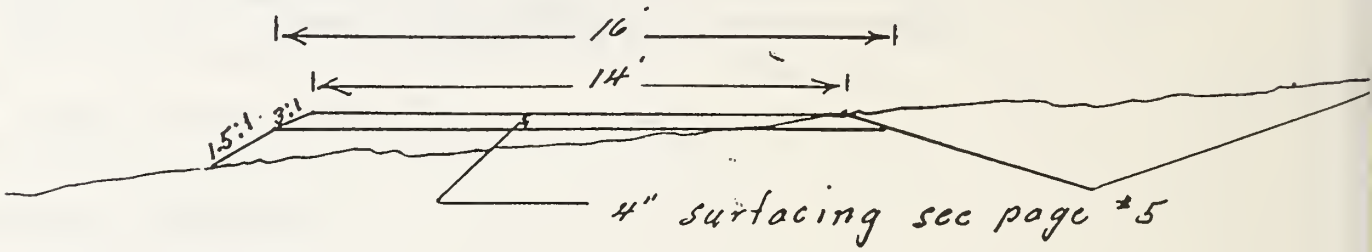
Imported Borrow: Source N/A

Minimum Fill _____ at _____

Borrow Ditch: Minimum Fill 1 ft at fill shoulder

Depth 1-2 1/2', Inslope 3:1, Outslope 3:1

Vary ditch depth as needed to gain embankment and provide for drainage.



TYPICAL SECTION
SIDE SLOPE _____ TO _____ %

Clearing Limits: _____

Imported Borrow: Source _____

Minimum Fill _____ at _____

Borrow Ditches: Minimum Fill _____ at _____

Depth _____ Left _____ Rt., Inslope _____, Outslope _____

APPENDIX D – SUMMARY OF MITIGATION AND MONITORING

APPENDIX D – SUMMARY OF MITIGATION AND MONITORING

Mitigation and monitoring measures in this section summarize general and specific measures discussed in previous sections of the document. These measures were developed in response to issues identified during the scoping process and to impacts identified during the analysis. The measures identified may be modified by the Authorized Officer based on new information or the need to lessen the impacts further. (The Authorized Officer is the Evanston Ranger District.) The Authorized Officer would discuss the measure with the appropriate specialist(s) for consideration and approval before the measure is implemented. The Forest, in consultation with the BLM, would be responsible for surface activities. The BLM would be responsible for all down-hole activities associated with drilling and production of the exploratory oil well, and compliance with Onshore Orders.

Mitigation Measures Measures designed to reduce or eliminate impacts of a project may be:

- incorporated in the design of the project (Chapter 2)
- required as standard stipulations by appropriate agencies
- required for a particular part of a project area (such as wildlife timing constraints)
- incorporated into the record of decision and accompany approval of the APD

Chevron has committed to incorporate the mitigation measures recommended by the resource specialists. Additional or revised mitigation measures could be proposed during the course of the project following site inspections and/or monitoring.

Administrative Requirements Chevron and its contractors and subcontractors would conduct operations in full compliance with all applicable Federal, State, and local laws and regulations, and within the guidelines specified in the approved APD. Applicable lease and/or unit stipulations would be complied with during all project-related activities, unless a written exception from the Authorized Officer has been granted. Such exceptions would be granted if adherence to a stipulation(s) is not possible or necessary, and the action is acceptable with proper mitigation.

Prior to commencing construction activities, Chevron, its contractors, and subcontractors would attend a preconstruction conference with the Authorized Officer. Environmental and safety training would be part of Chevron, contract, and subcontract employee training prior to construction. All employees would be familiarized with the resource protection policies of the Forest and the mitigation measures incorporated into the project through this EIS.

The Authorized Officer would inspect and montor the project during all stages including road and well pad construction, drilling and completion of the well, reclamation, and preparation for production.

Road Construction Plan Prior to commencing work, Chevron would submit a set of road construction plans for review and approval by the Forest. The plans would incorporate criteria developed by the Forest, which have been provided already to Chevron (refer to Appendix C). The plans would incorporate Forest Service standards and site-specific design features appropriate for the area. After approval of the road-construction plans, the road would be staked in accordance with the plan. Chevron would be responsible for preventive and corrective road maintenance needed throughout the project. Maintenance responsibilities may include (but are not limited to) replacing or supplementing gravel, cleaning ditches and other drainage facilities, dust abatement, and noxious weed control. Load-limit restrictions on highways would be complied with to prevent damage to road surfaces. Once construction is completed, all vehicles will be restricted to the newly constructed and reconstructed road surfaces and to the pad site. No off-road travel will be allowed.

Based on information gained during the environmental analysis, field surveys were recommended and completed during June and July of 1992 for:

- northern goshawk
- brownie ladyslipper
- wetland delineation and mapping

Survey revealed that an active goshawk nest occurs in the vicinity of Peninsula Road. Limited data are available to assist in determining the consequences of the proposed action on the goshawk. However, the Forest believes there is a moderate chance that the adult goshawks would abandon the nest during disturbance from construction. In considering possible mitigation measures, the Forest believed that relocation of the existing road in the vicinity of the nest would result in more impacts to other resources than would justify the road relocation. After the survey was conducted for this project, one other northern goshawk nest was found by Forest personnel in a neighboring area (approximately one mile northeast), and a goshawk was sighted in the Christmas Meadows area (which may imply another nest), indicating that a viable population of goshawks occupy the area. To many readers this may seem to indicate a rather sparse population when compared to other bird species. However, the area needed by the goshawk, especially during the nesting and post-fledgling periods, are quite large (refer to Appendix I). The goshawk will normally avoid other goshawk territories and space themselves accordingly.

There is the potential for goshawks using the nest in Section 5 to be impacted by activities associated with the proposed action. Construction activities are not expected to begin until mid-July. The concern then, is for disturbance to nesting birds and young at the time of year they are expected to fledge from the nest. In addition to the timing restriction on road re-construction activities in the PFA, the following mitigation measures are recommended to minimize impacts (disturbance) to nesting goshawks:

1) All heavy equipment hauled through the PFA (to be used in road construction outside the PFA) should be brought in during mid-day (10AM-3PM). This will minimize disturbance to nesting birds during peak feeding periods.

2) Construction personnel should minimize traffic to the site by carpooling.

3) All vehicle speeds should be kept under 20 mph and no engine brakes should be used in the PFA.

4) Vehicles should not be allowed to stop within the nest area, except for emergencies.

5) Vegetation removed in road re-construction within the nest area should be kept to a minimum and within the existing road prism.

6) Public use of the Pennisula Road should be restricted during years of active nesting at the nest in Section 5. Public motorized use of the road past the existing bridge across Stillwater Fork is restricted from September 15 through March. If the goshawk nest is occupied, public motorized use of this road will be restricted during the nesting period March through August. In essence this make the restriction year long since there is only a two week window between the end of August and September 15.

These mitigation measures are included to further reduce any impacts of disturbance to nesting goshawks. These measures should be implemented in years of active nesting only. Active nesting will be determined by a qualified wildlife biologist monitoring the site during the month of June.

No occurrences of the brownie ladyslipper or other threatened, endangered, or sensitive (TES) species of plants were discovered in the proposed project area during the July, 1992, survey.

Wetlands would be avoided wherever possible and impacts minimized when avoidance is not possible. (Refer to Appendix J.) The road would be placed so that it does not intercept or redirect drainage to or from wetland areas. Installation of culverts would be specified where needed to convey water across the road. Means of spreading drainage from the road would be implemented (for example; lateral ditch and outlets) and sedimentation barriers (for example; straw bales, slash) would be used at the base of the road to protect downslope wetlands from soil erosion.

The road would have to cross one wetland in Section 17. The wet area consists of springs and a small drainage that extends across the slope from a marsh toward the Main Fork. The natural drainage would be maintained with a French drain, which would convey water beneath the road from west to east. Construction of the road in this area would fill approximately 3,000 square feet (0.7 acre) of wetlands (22-foot road width across 133 feet of wetlands). Replacement of the area lost must be designated as part of project development plans and submitted to the Army Corps of Engineers for review and approval prior to construction. The most practical means to offset wetland losses is to reestablish wetlands on the segment of the Main Fork Road that would be abandoned during reclamation measures that are specified for this road as part of project requirements. Areas (depressions) of this road that occur near the Main Fork currently hold water year-round. Wetland reclamation measures include ripping operations to reduce compaction and transporting soil and plant material to the area from other wetland sites that would be affected. Other methods to offsetting wetland losses include channeling drainage from the road into existing wetlands with additional water would require less effort than establishing new wetlands. Conservative measurements indicate that approximately 13,000 square feet of wetlands would be established this way.

Hazards All toxic and/or hazardous substances would be controlled to prevent accidental discharge into surface or subsurface waters. Notice of any spill or leakage of materials in violation of 43 CFR 110.5 would be given immediately by Chevron to the Authorizing Officer and other Federal and State officials as required by law. Oral notice would be confirmed in writing within 72 hours of an incident.

Appropriate precautions would be employed at all times to prevent wildfires. The operator would be responsible for fire-suppression costs for any fires on public lands caused by the negligence of employees, contractors, or subcontractors.

No holes, pits, equipment, or unnecessary facilities, which could harm or otherwise endanger human life, wildlife, or livestock, would remain onsite (after drilling) during production or termination of the project.

Reclamation Plans for reclamation would be reviewed and approved by the Authorized Officer. Site-specific reclamation and/or erosion-control measures may be required by the Forest Service or BLM following site inspections and/or monitoring reclamation effectiveness. Reclamation measures would include ripping operations to reduce compaction (where applicable), grading, spreading any topsoil stockpiled from construction work, and seeding. In the case of wetland areas, soil and plant material would be transported from other wetland sites that would be affected.

Seeding, and other measures, may be repeated until reclamation progress is satisfactory, as determined by the Authorized Officer. Chevron would coordinate reclamation efforts with the Forest. Chevron would provide advance notice of seeding to the Forest so that arrangements can be made for Forest supervision of the seeding. The Authorized Officer would be contacted by the operator upon completion of the reclamation.

Monitoring All phases of the project (construction, drilling, reclamation, and during production) would be monitored by the Forest, BLM, and Chevron to ensure that the project is constructed and operated as planned and approved. Monitoring would include oversight of specific activities, locations, responsible parties, scheduling, and reporting.

To begin with, the Forest and BLM would require a preconstruction meeting with Chevron, its contractors, and subcontractors to ensure that the plans, standards, and mitigation are understood and enforced. Qualified representatives from the Forest, BLM, and Chevron would be in the project area during construction, drilling, and reclamation to validate that approved designs are adhered to. Survey of road work and erosion-control structures would be conducted to ensure adequate maintenance and effectiveness.

As mentioned above, prior to construction, the goshawk nest in the vicinity of Peninsula Road would be observed for evidence of current occupation. If the nest is being used, the Forest would allow travel on the existing road, but would require that no road construction in the vicinity of the nest (645-foot radius) would occur from March through August (nesting season varies from area to area) and that the nest be monitored throughout the project to note the behavior of the goshawks in response to project activities. If the nest is not occupied, the nest would be avoided and no mitigation or monitoring would be required.

Water quality of the Main Fork and springs that supply domestic water to the Christmas Meadows summer home area would be monitored on a regular basis before, during, and after the construction. To ensure the maintenance of water quality, Chevron implemented a water-quality monitoring program (Appendix K) in October 1992. Appropriate action would be taken to correct changes in the water, if any, caused by project activities. In the event that water quality monitoring detects water quality to be below State and Federal standards an immediate investigation to identify the source will occur. Measures will be taken to localize the source including shutting down the drilling operations if necessary.

Revegetation effectiveness would be monitored in accordance with the Erosion Control and Reclamation (Appendix E). Chevron would be required to take immediate remedial action to correct problems identified through monitoring efforts.

APPENDIX E – EROSION CONTROL AND RECLAMATION

APPENDIX E – EROSION CONTROL AND RECLAMATION

The objective of reclamation is to stabilize the disturbed soils with vegetation as soon as possible to reduce the potential for erosion. The following information provides mitigation measures that, when implemented, would ensure that the proposed project complies with Forest direction, prescriptions, standards and guidelines, road construction criteria, and mitigation regarding erosion and sedimentation control, reclamation developed specific to this project and addressed in this EIS. These measures would be applied to all surface disturbance created by the proposed project.

TOPSOIL

Topsoil, up to approximately six inches, at the well site, gravel source, and for relocation and construction of the road, would be removed and stockpiled for later use in reclamation. At Alternative Well Site B, if selected, the amount and treatment of topsoil would have to be determined through the wetland survey to be conducted prior to construction. Topsoil salvaging would not occur during inclement weather or when soil is wet to the degree that damage or compaction would result. At the well site, topsoil would be stockpiled in a designated location away from traffic areas. Drainage would be constructed to route runoff from surrounding areas around and away from the stockpiled. For the road work, topsoil would be removed and stockpiled at a designated are adjacent to the road or windrowed along the side of the road to the extent possible. Following completion of grading work, the topsoil would be spread in ditch areas to a uniform depth. In some areas, large rocks make conserving topsoil difficult or practically impossible. In those areas, an aggressive program of soil sampling/fertilizing, seeding, and mulching would be required instead.

Boulders and some woody vegetation removed during construction activities also would be retained for use for reclamation. At the well sites and gravel source, the boulders would be spread over the reclaimed areas to assist in erosion control. Some tree top and limb material may be used to construct sediment traps at water runoff points (culvert outlets, dips, lead-out ditches, and cut-to-fill transition points. Other materials, including stumps, would be hauled to a designated location, piled in pit, and burned as prescribed by the Forest. The residual would be buried.

CONSTRUCTION

Construction (earth disturbing activities will not be permitted during frozen or wet conditions, frozen conditions prohibit proper grading and compaction and wet condition could result in compaction of areas outside of the road or well site prism. Finish grading cannot normally be completed during frozen conditions resulting in possible erosion.

Road All excavation material, unless approved by the Forest as suitable or designated for special use, would be used within the designated embankment limits. Large, oversized rock may be wasted along the toe of the fill, as long as a continuous windrow is not created, and the rock is a minimum of five feet from the shoulder of the road and one foot below the grade of the shoulder. Oversize rock that cannot be wasted in this manner, would be hauled to fills that can accommodate the rock.

The depth of side ditches would vary between 2 and 2.5 feet as needed to obtain embankment, facilitate drainage, and maintain a reasonably uniform road grade. Following rough grading, the ditch inslope would be modified as needed to maintain an 18-inch subgrade width. The subgrade would be roller compacted at an optimum moisture content. The surface would be reasonably uniform with no water-ponding

depressions. No rock would protrude from the subgrade more than one-half the surfacing thickness. The road would be surfaced with four inches (compacted depth) of evenly graded two-inch crushed or screened rock from the designated gravel source. Surfacing would be roller compacted to optimum moisture content.

Gravel Source The gravel pit would be constructed so that runoff does not drain into the Main Fork and sediment is prevented from the stream. Depending on local precipitation and other conditions, it may be necessary to install sediment traps or barriers (slash or straw bales for example) to ensure that runoff is adequately filtered. The side slopes will be stabilized by laying them back to a natural appearance and seeded.

Well Pad The design of the well pad incorporates berms and drainage to retain sediment from runoff onsite. In addition, the well pad would be covered with a four-inch gravel surface to reduce erosion and production of sediment. Diversion ditches, or channels, would be constructed on the perimeter of the well pad to keep runoff from surrounding undisturbed areas from draining onto the well pad. Energy dispersion structures would be constructed to ensure that diverted runoff is adequately controlled and erosion at discharge points would be minimized.

TEMPORARY EROSION AND SEDIMENTATION CONTROL

Temporary sediment barriers of woody materials removed during clearing or straw bales would be installed at appropriate locations as determined by the Forest's Authorized Officer or Chevron's construction inspector. These structures would be maintained until revegetation is effective.

RECLAMATION

Recontouring Cuts made in steep or rolling terrain during construction would be regraded and contoured to blend with the surrounding landscape and to reestablish natural drainage patterns. Emphasis during recontouring would be to return the disturbed areas to near-preconstruction condition, stabilize slopes, control surface drainage, and provide an aesthetic appearance.

Scarification Disturbed areas (to be reclaimed) would be scarified to lessen areas compacted by equipment and vehicles. Scarifying promotes improved infiltration of water, aeration of the soil, and penetration by roots thus enhancing effective revegetation. Scarification would be important in sloping areas to provide a roughened interface between the subsoil and topsoil to reduce the potential for soil slippage. Ripping would be at least 12 inches deep and spaced no more than 16 inches apart. Multiple passes over the same area may be required to adequately relieve compaction. Scarification would be along contour to the extent possible to reduce the potential for erosion.

Topsoil The topsoil salvaged and stockpiled at the beginning of construction would be spread uniformly over the disturbed areas. In the case of the road,the topsoil would be spread in ditch area to a uniform depth. Topsoil would not be spread during wet periods when soils are easily compacted. If compaction occurs while spreading the topsoil, scarification may be necessary unless the compaction could be relieved by equipment used for seeding preparation. Travel over areas where topsoil has been spread would be restricted. Topsoil would be spread on steep cut and fill slopes wherever feasible.

Fertilization Fertilizer amounts and frequency of application would be determined from the analysis of conserved topsoil conducted by the permittee. In general, disturbed areas would be fertilized to enhance revegetation. Where feasible, fertilizer would be broadcast and incorporated into the top three inches of topsoil. On steep cut or fill slopes, fertilizer would be broadcast by hand or by hydro methods. On fill

slopes, fertilizers would be incorporated into the soil by hand raking where feasible. A rate of 30 pounds per acre each of nitrogen and phosphorus and 10 pounds per acre potassium is recommended.

Seeding Seeding would occur during the first fall after drilling depending on weather conditions. Seeding would be completed late enough in the fall so that the seeds do not germinate until the following spring. Seed would be broadcast using the seeding rate listed below. The seed mix was developed from information provided by the Forest. Seeding rates are based on pure live seed (PLS) and all seed would have been tested within one year of use. Also, seed would be certified and free from noxious weeds. Seed would be broadcast and the seeded areas would be lightly dragged with a chain or hand raked to cover the seed with .25 to .5 inch of topsoil.

Species	Rate lbs/acre (PLS)
Timothy	5.0
Intermediate wheatgrass	10.0
Smooth brome	10.0
Orchard grass	10.0
Red mammoth clover	2.5
Dutch white clover	2.5
	40.0

Seed amounts applied with a drill or during hydromulching are usually half of the amount of that when broadcast.

Mulching Mulching would be applied to rehabilitated areas to reduce the potential for erosion and enhance seedling establishment. There are a number of options available to the permittee. Wood chips, rock mulches, and hydromulch are suitable for areas other than steep cutslopes. The mulch would be spread uniformly over the area so that 90 percent or more of the surface is covered.

Hydromulch has short fibers, is easily detached and transported off steeper slopes by surface runoff, and is ineffective control for mass erosion and bank sloughing when soils are saturated.

Hay mulch could be used on all disturbed sites for erosion control. On cut and fill slopes, a certified weed-free hay mulch could be applied at an application rate of two inches.

MAINTENANCE

In the late spring or early summer of the year following seeding, the Forest would determine the need to fertilize seeded sites for improved establishment. The Forest would conduct annual inspections if reclamation efforts to evaluate erosion control and revegetation success until bond release. The Forest would determine the need to reseed, fertilize, or spot treat disturbed areas after the second year. Maintenance of all temporary and permanent erosion-control structures would occur annually until the Forest determines that revegetation is successful. Additional measures would be implemented as necessary.

NOXIOUS WEED CONTROL

The Forest would determine the size and density of the noxious weed infestations requiring implementation of a control program. Mechanical, chemical, biological, or other methods approved by the Forest would be used to control infestations of noxious weeds in disturbed areas. Control methods would be applied in the season or growth stage when most effective.

APPENDIX F - AGENCY CORRESPONDENCE

Department of Agriculture | Service | National Forest | 1565 Hwy 150, Suite A
Evanston, WY 82930
(307) 789-3194

Reply to: 2820

Date: October 18, 1991

U.S. Fish and Wildlife Service
Attention: Field Supervisor
2078 Administration Building
1745 West, 1700 South
Salt Lake City, UT 84104-5110

Dear Field Supervisor:

As part of an environmental evaluation for natural resource development, the Wasatch-Cache National Forest must determine whether threatened or endangered species have a potential to be affected.

We are requesting information on the presence or absences of listed and proposed threatened or endangered species and designated and proposed critical habitat which may occur in Main Fork of the Stillwater Fork (Peninsula Area) of Wasatch-Cache National Forest. A map of the area in question is enclosed for your reference.

We appreciate your assistance and please call Barry Burkhardt at 524-6333 if you have any questions on this matter.

Sincerely,

Barry Burkhardt
for
STEPHEN RYBERG
District Ranger

Enclosure: Map of the Table Top Prospect Project

United States Department of the Interior

FISH AND WILDLIFE SERVICE
FISH AND WILDLIFE ENHANCEMENT
UTAH STATE OFFICE
2078 ADMINISTRATION BUILDING
1745 WEST 1700 SOUTH
SALT LAKE CITY, UTAH 84104-5110

TAKE PRIDE IN AMERICA

In Reply Refer To

(FWE)

December 13, 1991

Steve Ryberg, District Ranger
Evanston Ranger District
Wasatch-Cache National Forest
P.O. Box 1880
Evanston, WY 82930

Dear Mr. Ryberg:

We have received your letter of October 18, 1991 regarding natural resource development in the Main Fork-Stillwater Fork area of the Wasatch-Cache National Forest.

The U.S. Fish and Wildlife Service (Service) advises that no listed threatened or endangered species are known to occur in this project area. We would like to bring to your attention, however, species which are candidates for official listing as either threatened or endangered species (Federal Register Vol. 55, No. 35, February 21, 1990 and Federal Register Vol. 56, No. 225, November 21, 1991). While these species have no legal protection, at present, under the Endangered Species Act, we would ask that you take care to avoid them if they are found in the area of your project. These species are:

Northern goshawk — Accipiter gentilis

The Service has received two petitions requesting emergency listing of the Northern goshawk. These are currently being reviewed and Findings on whether or not listing is warranted will be published in the Federal Register in the near future.

If you have any questions please contact Susan Linner of this office at (801)524-5630 or FTS 588-5630.

Sincerely,

Clark D. Johnson
Assistant Field Supervisor

United States Department of Agriculture | Forest Service | Wasatch-Cache National Forest | Evanston Ranger District
1565 Hwy 150, Suite A
Evanston, WY 82930
(307) 789-3194

Reply to: 2820

Date: October 18, 1991

Utah Natural Heritage Program
Attention: Mr. Joel Tuhy
1636 West North Temple
Suite 316
Salt Lake City, UT 84116-3193

Dear Mr. Tuhy:

As part of an environmental evaluation for natural resource development, the Wasatch-Cache National Forest must determine whether rare, threatened or endangered plant species have a potential to be affected.

We are soliciting your assistance in determining if rare, threatened or endangered plant species, including those considered sensitive by the state of Utah, have a potential to occur in Main Fork of the Stillwater Fork (Peninsula Area) of Wasatch-Cache National Forest. A map of the area in question is enclosed for your reference.

We appreciate your assistance and also appreciate having a data base in Utah for these valuable biological entities.

Please call Barry Burkhardt at 524-6333 if you have any questions on this matter.

Sincerely,

Bernard Cleary
for
STEPHEN RYBERG
District Ranger

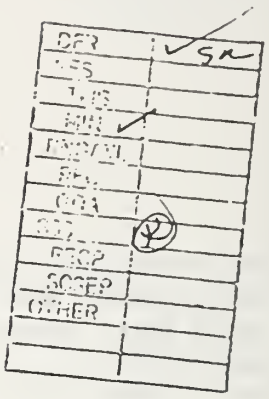
Enclosure: Map of the Table Top Prospect Project

State of Utah
DEPARTMENT OF NATURAL RESOURCES

Norman H. Bangerter
Governor
Dee C. Hansen
Executive Director
Joel Tuhy
Coordinator

Utah Natural Heritage Program
1636 West North Temple, Suite 316
Salt Lake City, Utah 84116-3193
801-538-7200
801-538-7315 Fax

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15 November, 1991

Stephen Ryberg
Wasatch-Cache National Forest
Evanston Ranger District
1565 Hwy. 150, Suite A
Evanston, WY 82930

Dear Mr. Ryberg:

I am writing in response to your letter requesting information concerning the presence or absence of rare, Threatened, Endangered, or taxa considered sensitive by the State of Utah in Main Fork of the Stillwater Fork of Wasatch-Cache National Forest.

The State of Utah does not maintain a list of special status plants and does not provide protection for sensitive plant species at this time. However, our program tracks information on all plants in the State of Utah which may be considered rare. This tracking list is largely made up of taxa with some sort of federal protection status and taxa on the Region 4, Forest Service Sensitive Plant List.

Our database search was conducted for Townships 1 and 2 North, Range 10 West. We limited our search to federally listed or proposed Threatened or Endangered, Candidate (Category 1 or 2) and Forest Service Region 4 "Sensitive" plant taxa. The results of the search were negative; no special status plants were found in this search area.

Please be aware that the information in our plant data base is only as complete and accurate as the sources from which it has come. Much of our plant information has come from existing sources such as herbariums, reports, agency files and knowledgeable people. We cannot say with certainty that special status plants are <u>not</u> in this area if they are not included in the data base, it merely means that no information is stored in our files at this time. However, our data is continually updated as new information becomes available. As you know, the most definitive way to know the presence or absence of special status plant taxa in this area is to conduct an on-the-ground survey at the appropriate time(s) of year.

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Please contact our office if you have further questions concerning this response, or if you need information regarding any other projects.

Sincerely,

Joel M. Peterson

Joel M. Peterson, Data Manager
Utah Natural Heritage Program

United States Department of Agriculture
Forest Service
Wasatch-Cache National Forest
Evanston Ranger District
1565 Hwy 150, Suite A
Evanston, WY 82930
(307) 789-3194

October 18, 1991

Mr. Jim Dykman
Utah State Historical Society
300 Rio Grande
Salt Lake City, Utah 84101

Dear Mr. Dykman:

In support of Chevron USA, Inc.'s Table Top Prospect Project, the Wasatch-Cache National Forest would like to initiate consultation with your office. Dames and Moore has been retained to help produce the necessary documentation and Mr. Everett Bassett of their Salt Lake City office is coordinating the cultural resource compliance issues.

The Table Top Prospect Project will involve proposed impacts to approximately 20 acres in addition to 4.5 miles of new and 1.75 miles of improved access roads. Both a class I and a class III survey of these areas is required and we understand that there will be effects to features within the recognized Howe Flume Historic District which may require mitigation. We look forward to consulting with you on this issue. For your reference, I have included a map of the proposed project area.

If you have any questions or comments please feel free to call at any time.

Sincerely,

Bernard Asay
for
Stephen Ryberg
Forest Supervisor

Enclosure

Norman H. Bangerter
Governor
Max J. Evans
Director

State of Utah
Division of State History
(Utah State Historical Society)
Department of Community and Economic Development
300 Rio Grande
Salt Lake City, Utah 84101-1182
801-533-5755
FAX 801-364-6436

October 31, 1991

Mr. Stephen Ryberg
Forest Supervisor
Wasatch-Cache national Forest
Evanston Ranger District
1565 Hwy 150, Suite A
Evanston, Wy 82930

RE: Table Top Prospect Project

In Reply Please Refer to Case No. 91-1105

Dear Mr. Ryberg:

The Utah State Historic Preservation Office received information on the project referenced above on 28 october 1991. We understand this documentation was sent to our office for information purposes only. We appreciate being informed as to the progress of the project and will be adding this information to the case file.

This information is provided on request to assist United States Forest Service in identifying historic properties, as specified in 36 CFR 800 for Section 106 consultation procedures. If you have questions or need additional assistance, please contact me at (801) 533-7039.

Sincerely,

for James L. Dykman
Regulation Assistance Coordinator

JLD:dls 91-1105 FS/

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DSR	✓ SL
RES	
TMS	
(DP)	✓
RMS/GIS	
RES	
GDA	
SSS	
RECP	
SOSEP	
OTHER	

Board of State History: Thomas G. Alexander • Douglas D. Alder • Leonard J. Arrington • Marilyn Barker
Boyd A. Blackner • J. Eldon Dorman • Hugh C. Garner • Peter L. Goss • Dean L. May • Amy Allen Price • Jerry Wyne

AUG - 3 1993

State of Utah

Department of Community & Economic Development
Division of State History
Utah State Historical Society

Michael O. Leavitt
Governor
Max J. Evans
Director

300 Rio Grande
Salt Lake City, Utah 84101-1182
(801) 533-3500
FAX (801) 533-3503

July 29, 1993

Susan Giannettino
Forest Supervisor
Wasatch-Cache National Forest
8236 Federal Building
125 South State Street
Salt Lake City, Utah 84138

RE: Chevron Table Top Project

In Reply Please Refer to Case No. 91-1105

Dear Ms. Giannettino:

The Utah State Historic Preservation Office received the above referenced Memorandum of Agreement. Our office has signed the MOA and is returning it your office as requested.

This information is provided on request to assist the Forest Service with its Section 106 responsibilities as specified in 36CFR800. If you have questions, please contact me at (801) 533-3555.

Sincerely,

James L. Dykmann
Compliance Coordinator

JLD:91-1105 FS/MOA/NE

Board of State History Marilyn C. Barker • Dale L. Berge • Boyd A. Blackner • Peter L. Goss
David D. Hansen • Carol C. Madsen • Dean L. May • Christie Needham • Thomas E. Sawyer • Penny Sampinos • Jerry Wehe

Advisory
Council On
Historic
Preservation

The Old Post Office Building
1100 Pennsylvania Avenue, NW, #809
Washington, DC 20004

Reply to: 730 Simms Street, #401
Golden, Colorado 80401

SEP 0 9 1993

September 1, 1993

Susan Giannettino
Forest Supervisor
Wasatch-Cache National Forest
8236 Federal Building
125 South State Street
Salt Lake City, UT 84138

REF: Memorandum of Agreement regarding the Chevron Table Top Project.

Dear Ms. Giannettino:

The enclosed Memorandum of Agreement regarding the Chevron Table Top Project has been executed by the Council. This action constitutes the comments of the Council required by Section 106 of the National Historic Preservation Act and the Council's regulations. Please send copies of the signed Agreement to the Utah State Historic Preservation Officer and your Federal Preservation Officer.

The Council appreciates your cooperation in reaching a satisfactory resolution of this matter.

Sincerely,

Claudia Nissley
Director, Western Office
of Review

Enclosure

MEMORANDUM OF AGREEMENT

WHEREAS, the Forest Service has determined that the proposed Chevron Table Top Project on the Wasatch-Cache National Forest will have an adverse effect upon the National Register Howe Flume Historic District, and has consulted with the Utah State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation (Council) pursuant to 36 CFR Part 800, regulations implementing Section 106 of the National Historic Preservation Act (16 U.S.C. 470f) [and Section 110(f) of the same Act (16 U.S.C. 470h- 2(f)] and

WHEREAS, the Forest Service, the Utah State Preservation Officer (SHPO) and the Advisory Council on Historic Preservation agree that the basic inventory of information provided in the National Register nomination for the Howe Flume District is adequate for registration and for assessing the effects on the district of the proposed project,

NOW, THEREFORE, the Forest Service, the Utah SHPO, and the Council agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the undertaking on historic properities.

Stipulations

The Forest Service will ensure that the following measures are carried out by qualified professionals to protect the archeological information potential of the property/district.

1) Protection of the portion of Howe Flume between PI#s 43 and 48 by fencing. (See attached engineering drawings. It is possible that during proposed construction this section of the flume might be impacted by falling rocks or debris from regrading of the access road.) The fence will be constructed prior to earthmoving activities and regularly monitored by the Forest Service during construction to meet the intent of protection.

2) Public interpretation of the Howe Flume for National Forest visitors will be done. Depending on the nature of the final decision on how the access road will be managed, interpretation can be:

a) by permanent signs at the flume.

b) by brochure.

c) at the Bear River Guard Station as part of the general tie-hack interpretation being undertaken there.

d) by periodic guided tours presented by the Forest Service.

e) Some combination of the above items a-d.

3) If previously unrecorded historic or prehistoric remains are encountered during construction of the access road or well pad, ground disturbing activities within the immediate discovery area will be suspended until a

professional consideration and evaluation of those remains can be accomplished. The SHPO and the Advisory Council will be consulted as provided in 36CFR800.11 to assess the effects of the project on the newly discovered materials.

Execution of the Memorandum of Agreement and implementation of its terms evidence that the Forest Service has afforded the Council an opportunity to comment on the Chevron Table Top Project and its effects on historic properties, and that the Forest Service has taken into account the effects of the undertaking on historic properties.

ADVISORY COUNCIL ON HISTORIC PRESERVATION

By: Robert D. Bush Date: 8/30/93
(Name and title of signer) Executive Director

FOREST SERVICE

By: Jim Griffith Forest Supervisor Date: 7/8/93
(Name and title of signer)

UTAH STATE HISTORIC PRESERVATION OFFICE

By: Max Evans SHPO Date: 7.21.93
(Name and title of signer)

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF PARKS AND RECREATION

Norman H. Bangerter
Governor
Dee C. Hansen
Executive Director
Jerry A. Miller
Division Director

1636 West North Temple Suite 116
Salt Lake City Utah 84116-3156
801 538-7220

Bernard Asay
U. S. Forest Service
Evanston, Wy 82931-1880

April 4, 1992

Re:Chevron (Access Management Hwy U-150)

Dear Bernard,

Concerning our discussions on Chevron's use of U-150 in the winter after the gate is closed, I want to again stress the conflict between the recreation use of this highway (primarily snowmobiles) and Chevron's traffic. This State of Utah designated snowmobile trail receives heavy use on weekends and holidays from December through March. Our main concern is the safety of snowmobilers when they encounter the oil traffic.

If Chevron takes adequate precautions for safety and schedules their traffic for minimum conflict with recreation traffic, we will not object to Chevron using the road during the snowmobile season.

Sincerely,

Steve Hewson

Steve Hewson
Assistant Park Manager
Rockport State Park
9040 North State Hwy. 302
Rockport, UT 84061-9702

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United States Department of Agriculture
Forest Service
Wasatch-Cache National Forest
Evanston Ranger District
1565 Hwy 150, Suite A
Evanston, WY 82930
(307) 789-3194

Reply to: 1950

Date: March 18, 1992

Rock Port State Park
Attn: Steve Hewson
9040 N. State Hwy 302
Rock Port, UT 84036

Re: Chevron (Access Management Hwy U-150)

Dear Steve:

The purpose of this letter is to document our past discussions concerning Chevron's use of the Mirror Lake Hwy specifically that portion between the existing gate near Bear River Service and the junction with the Stillwater Road leading to Christmas Meadows.

In your letter to us, copy attached, you list several specific requirements you would like to see implemented. As in our subsequent phone conversation, we felt that all the requirements were reasonable but that we needed to work a little with the one concerning weekday travel only behind the gate. We agreed that Chevron could in fact utilize the highway on weekends if they would schedule their traffic to occur early in the morning and later in the evening hours. In emergency situations, vehicles needing to be on the highway during peak use by snowmobiles would have to have warning lights and/or other devises capable of alerting snowmobilers of their approach.

If this does not clearly state what you understood we agreed to, let us know. We are in the process of completing the draft EIS and need to nail down as many specifics as possible.

Please give me a call at 307-789-3194 if you have any questions.

Sincerely,

Bernard Asay
for
STEVE M. RYBERG
District Ranger

State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF PARKS AND RECREATION

Norman H Bangerter
Governor
Dee C Hansen
Executive Director
Jerry A Miller
Division Director

Northern Region
1084 North Redwood Road
Salt Lake City, Utah 84116-1555
801-533-5127

Bernard Asay
U. S. Forest Service
Evanston District
P.O. Box 1880
Evanston, WY 82931-1880

January 14, 1992

Dear Bernard,

I have several concerns involving winter work on the Chevron site near Christmas Meadows. As you know, the Utah Division of Parks and Recreation grooms and performs safety patrols on SR 150(the Mirror Lake Highway) between Bear River Service and Soapstone when that portion of the road is closed for the winter. These two areas have snow removal and rest rooms provided for snowmobile parking. They are two of Northern Utah's most popular trailheads with Bear River Service also heavily used by people from Wyoming. This trail is also becoming popular with cross-country skiers.

If Chevron is planning to use SR 150 to access their site after the road is closed for the winter, I would like to see several conditions met to provide for the safety of snowmobilers and other winter recreation users. First, the gate at Bear River
Service should remain in the present location. After it is closed for the season, only Chevron, Utah Parks and Recreation and U.S. Forest Service personnel should be allowed access through the gate. I would like to see Chevron restricted to use the road Monday through Friday only, with the weekends reserved for snowmobile traffic. I request that only half the road be cleared of snow, while the other side will continue to be groomed as a snowmobile trail. Signs to caution snowmobiles to watch for heavy truck traffic should be placed at Bear River Service and along the road. The gate needs to remain clear at all times so that the Park's snowcat can get through to Bear River Service to fuel.

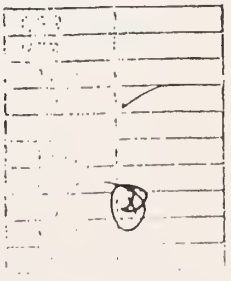
If these safety concerns can be met, the Utah Division of Parks and Recreation would have no objection to Chevron's plan to access their drill site along SR 150. If You need any additional information please contact me.

Sincerely,

Steve Hewson

Steve Hewson
Assistant Park Manager
Rockport State Park
9040 North State Hwy. 302
Peoa, UT 84061-9702

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APPENDIX G - THREATENED AND ENDANGERED SPECIES DEFINITIONS

APPENDIX G - THREATENED AND ENDANGERED SPECIES DEFINITIONS

FEDERAL CODE DEFINITIONS

Endangered (E): Any species that is in danger of extinction throughout all or a significant portions of its range other than a species of the Class Insecta determined by the Secretary to constitute a pest whose protection under the Endangered Species Act would present an overwhelming and overriding risk to man.

Threatened (T): Any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Category 1 Candidate Species (C1): Status review taxa for which the FWS currently has on file substantial information on biological vulnerability and threat(s) to support the appropriateness of proposing to list the taxa as an endangered or threatened species.

Category 2 Candidate Species (C2): Status review taxa for which information now in possession of the FWS indicate that proposing to list the taxa as an endangered or threatened species is possibly appropriate but for which substantial data on biological vulnerability or threat(s) are not currently known or on file to support proposed rules,

Category 3 (C3): Taxa for which the FWS has persuasive evidence of extinction (Group 3A); taxa does not meet the Endangered Species Act's definition of a species (Group 3B); or taxa that have proven to be more abundant or widespread than previously believed and/or those that are not subject to an identifiable threat (Group 3C).

Forest Service Sensitive: Those plant and animal species identified by a Regional Forester for which population viability is a concern, as evidenced by: a) significant current or predicted downward trends in population numbers or density, or b) significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution.

STATE OF UTAH CODE DEFINITIONS

Endangered: Any species, subspecies, or subpopulation which is threatened with extinction resulting from very low to declining numbers, alteration and/or reduction of habitat, detrimental environmental changes, or any combination of the above. Continued survival is unlikely without implementation of special measures.

Threatened: Any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Sensitive: Any species which, although still occurring in numbers adequate for survival, has been greatly depleted or occurring in limited areas and/or numbers due to a restricted or specialized habitat. A management program, including protection or habitat manipulation, is needed.

Status Questioned: Insufficient data available on which to base a reliable assessment as to status.

APPENDIX H - FOREST SERVICE VISUAL MANAGEMENT SYSTEM

APPENDIX H – FOREST SERVICE VISUAL MANAGEMENT SYSTEM

The Visual Management System (VMS) uses three visual resource inventory components to develop Visual Quality Objectives (VQOs): variety classes, visibility from sensitive viewpoints, and visual sensitivity. VQO class designations are used by the Forest Service to manage the visual resource. These designations define the acceptable level of change that a proposed project may introduce into the visual landscape.

PRESERVATION Management activities, except for very low visual impact recreation facilities, are prohibited. This VQO allows for only "ecological" changes. This management objective applies to wilderness areas, primitive areas, other special classified areas, and some unique management units that do not justify other special classification.

RETENTION Management activities must not be visually evident to the casual forest visitor. Modifications must repeat form, line, color and texture found in the surrounding natural landscape.

PARTIAL RETENTION Modifications may be visually evident, but must be integrated into and visually subordinate to the surrounding landscape. Activities may introduce form, line, color and texture not common in the surrounding landscape, but they should not attract attention.

MODIFICATION Management activities may visually dominate the surrounding natural landscape; however, they must repeat the naturally established elements of form, line, color and texture to appear compatible with the natural surroundings.

MAXIMUM MODIFICATION Modification may visually dominate the surrounding natural landscape, yet when viewed form background distance, activities must appear as natural occurrences within the landscape. alterations in foreground and middleground views may be out of scale or introduce visual elements ont found in the natural landscape.

Existing VQO mapping of the project area was collected. However, supporting visual resources inventory data for the study area (variety class, visibility, and visual sensitivity) were not available. For this reason, a detailed inventory was conducted to develop the data necessary to assess the potential visual impacts of the proposed project. Variety classes were developed from an inventory and evaluation of landscape character types. Sensitive viewpoints were identified, inventoried, and their visual sensitivity was evaluated based on user attitude and use volume. Visibility from individual viewpoints was established through manual viewsheds delineated on the topographic base map (7.5–minute scale).

VQO classes were mapped for the project area by overlaying and combining the mapped inventories of variety class, visibility and visual sensitivity.

VQOs are identified by establishing variety class for each of the sensitive viewpoints. Assign level 1 sensitivity and appropriate distance zone (visibility) of foreground, middleground or background. This process is then repeated for sensitivity level 2. Areas which do not meet criteria for levels 1 and 2 are placed in level 3. Identification of distance zones are generally not necessary in level 3 cases. These overlays will show the seen areas in terms of distance zones with the sensitivity levels identified. Creating a composite overlay of these three components establishes the appropriate class designation of VQO.

Landscape Character Types

Landscape types were identified within the project area by delineating areas with homogeneous or characteristic patterns of landform, water, vegetation, land use, and distinctive features (refer to Figure 3-8). Landscape character types were delineated and mapped through an analysis of the landform, waterforms, and vegetative patterns during field reconnaissance.

Variety Classes

Variety classes were developed through a further evaluation of the inventoried landscape character types. The evaluation uses the Forest Service criteria in Appendix B to assign a variety class designation to each of the areas delineated on the landscape character type inventory map for the project area.

VARIETY CLASS A (DISTINCTIVE)

Landform Characteristics

Class A Outstanding areas where characteristic features of landform, rock, water, and vegetation are distinctive or unique in the context of the surrounding region. These features exhibit considerable variety in form, line, color, and texture.

Terrain is highly varied and distinctive with such features as

- large playas, volcanic cones, volcanic necks, unique lava flows, edges of prominent lava flows, gypsum sand dunes, craggy mountain peaks, badlands, and/or sharp jagged ridges; or
- with isolated mountain peaks, domes, or tablelands with distinctive form and color contrast that become focal points; or
- with valleys or canyons with vertical or near vertical walls, and/or unusual configuration or colors; or
- with escarpments, cliffs or talus slopes that dominate the surrounding landscape because of their scale, color, and/or texture.

Vegetation Characteristics

Vegetation is highly varied and distinctive with such features as

- subalpine and montane coniferous forest, deciduous forest, riparian deciduous forest, or mountain meadow grassland that exhibit the normal range of sizes, forms, colors, textures, and spacings; or
- with pinon-juniper woodland combined in strongly defined patterns with plains grassland; or
- with oak-pine woodland, pinon-juniper woodland, or aspen stands combined in strongly defined patterns with riparian deciduous forest and woodland, plains or desert grassland, desert pavement, and/or rockland; or
- with montane coniferous forest combined in strongly defined patterns with deciduous forest, mountain meadow grassland, and/or rockland; or
- with dramatic display of seasonal color.

Waterform Characteristics

This Class A variety class has such features as

- reservoirs, lakes and perennial watercourses; or
- interrupted watercourses that have unique features such as falls, rapids, cascades, and/or pools during their flow season; or
- wetlands such as saline (alkali) marshes, seasonally flooded basins or flats, fresh meadows, fresh marshes or bogs.

VARIETY CLASS B (COMMON)

Class B Above average areas in which features provide variety in form, line, color, and texture; and although the combinations are not rare in the surrounding region, they provide sufficient visual diversity to be considered moderately distinctive.

Landform Characteristics

Terrain is moderately varied with

- broad slopes that may be steep but stable, or valleys and basins that are not dramatically defined by adjacent landforms; or
- with mountain peaks, domes, small volcanic cones, tablelands, ridges, and rounded hills, which are not visually dominant and are surrounded by similar landforms; or
- with canyons and drainages that lack distinctive configuration or colors; or
- with features such as bluffs or groups of boulders that are subordinate to the landscape.

Vegetation Characteristics

Vegetation is moderately varied with

- oak-pine woodland, shrub oak woodland, pinon-juniper woodland, or montane coniferous forest, that exhibit the normal range of sizes, forms, colors, textures and spacings; or
- with Great Basin desert scrub, desert grassland, plains grassland, or interior chaparral combined with riparian deciduous woodland in patterns that offer some visual relief; or
- with pinon-juniper woodland or oak-woodland combined in strongly defined patterns with plains grassland; or
- with subtle seasonal color contrasts.

Waterform Characteristics

Waterform consists of

- interrupted watercourses or interrupted watercourses that have unique features such as falls, rapids, cascades, and/or pools during flow season; or
- ponds and perennial watercourses with flows less than 10 cubic feet per second that have no unique features.

VARIETY CLASS C (MINIMAL)

Class C Common areas where characteristic features have moderate-to-little variety in form, line, color, or texture, in relation to the surrounding region.

Landform Characteristics

This type of characteristic consists of vast expanses of rolling or slightly dissected landform that provide little illusion of spatial definition or landmarks with which to orient. These expanses may be sloping but relatively lacking in visual interest in comparison to the other landforms in the character subtype.

Vegetation Characteristics

This type of characteristic consists of extensive areas of similar vegetation such as Great Basin desert scrub, desert grassland, or plains grassland that have very limited variation in color and texture.

Waterform Characteristics

This type of characteristic features land with interrupted and ephemeral water courses;
or absent.

SOURCE: The Visual Management System - Region 3 Supplement (Draft). 1974.

Sensitive Viewpoints

Sensitive viewpoints were identified and inventoried from a review of the Forest Plan maps and interviews with Forest Service personnel. Sensitive viewpoints identified in the study area were categorized into the following groups:

Major Travel Routes - improved travel routes with a predominance of users on longer distance trips and with traffic volumes of generally 200 or more Average Daily Traffic (ADT)

Secondary Roads - other improved or unimproved roads with traffic volumes generally below 200 ADT

Trails - hiking trails and primitive roads used as trails

Recreation sites – developed sites used for day use and camping (some facilities provided), high use areas

VISUAL SENSITIVITY

Visual sensitivity is a measure of the expected level of viewer concern for potential changes in the landscape. Visual sensitivity for the inventoried viewpoints was evaluated based on two criteria:

Use Volume – the number of viewers expected to use a viewpoint

User Attitude – addresses the relative importance or value placed on landscape scenery by the viewer

The evaluations combines these two criteria to establish the visual sensitivity level of each viewpoint. User attitude was considered the more important criteria and is weighted somewhat higher than use volume in the visual sensitivity evaluation.

VISIBILITY

The areas visible from sensitive viewpoints are shown as viewsheds on the project topographic base map. Viewsheds were delineated through an analysis of the topography supplemented by videotape taken from viewpoints.

Visibility also accounts for the specific viewing conditions that could affect how a viewer sees from a viewpoint: including terrain backdrop, vegetation screening, and viewer position. For example, distant mountains backdropping the viewed area may reduce the level of change noticed in the landscape.

The VMS expresses visibility in terms of three distance zones: foreground, middleground, and background. For this study, an additional distance zone, seldom seen, describes areas not visible from sensitive viewpoints. The distance zones are defined as follows:

Foreground – (0 to .5 mile) – The limit of a viewed area in which details are perceived and obvious. Textural and other aesthetic qualities of vegetation are normally perceptible within this zone.

Middleground – (.5 to 3 – 5 miles) – This zone includes viewed ares in which details of foliage and fine textures cease to be perceptible. Vegetation begin to appear as outlines or patterns.

Background – (3 – 5 to 10 miles) – That portion of the landscape where texture and color are weak and landforms become the most dominant element.

Seldom Seen – Those areas of the landscape which, because of topographic relief, are screened from the viewpoint or are beyond 10 miles.

APPENDIX I - BIOLOGICAL ASSESSMENT/EVALUATION

BIOLOGICAL ASSESSMENT/EVALUATION
Chevron Table Top Prospect (Exploratory Well)
EVANSTON RANGER DISTRICT
WASATCH-CACHE NATIONAL FOREST
12/5/93

I. INTRODUCTION

This Biological Assessment/Evaluation is prepared in response to the proposed construction and drilling of an exploratory oil/gas well in the Main Fork drainage on the Evanston Ranger District. Construction on the project is scheduled to begin mid to late summer 1994 with the drilling phase running into early 1995. Reclamation operations will be completed by fall of 1995 (full reclamation if drilling is unsuccessful, partial reclamation if well goes into production). This proposal will be covered under National Environmental Policy Act regulations by an Environmental Impact Statement and Record of Decision.

II. PURPOSE AND NEED

The purpose of this Biological Assessment/Evaluation is to make a determination regarding the likely effects of the preferred alternative on Federally listed threatened, endangered, and proposed species and on U.S. Forest Service classified sensitive species. The Endangered Species Act (ESA) of 1973 (PL 93-205, as amended) requires federal agencies to insure that any activities they authorize, fund, or carry out do not jeopardize the continued existence of any wildlife species Federally listed, or proposed for listing, as threatened or endangered (Section 7). This Biological Assessment is an analysis of which threatened, endangered, or proposed species may occur in the project area, and whether any impacts on those species are anticipated.

Although not required under the ESA, it is Forest Service policy to analyze potential impacts to sensitive species as well (Forest Service Manual (FSM) 2670.31-32). Sensitive species are identified by the Forest Service Regional Forester as "those...for which population viability is a concern, as evidenced by...significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution"(FSM 2670.5). This document includes the analysis of those sensitive species that may occur in the project area, and a discussion of any impacts to those species that may affect their population viability.

This document is the result of a culmination of effort, research, and surveys provided by Wildlife Biologists and Plant Ecologists from the U.S. Forest Service, U.S. Fish and Wildlife Service, a PHD Candidate with Utah State University, and consulting Wildlife Biologists and Plant Ecologists with Dames and Moore (third party consulting firm writing project EIS). This document is prepared using direction from FSM 2672.4, 2673.43.

Required survey protocol for Sensitive species have not yet been established for the Intermountain Region. Survey methods for this project used some of the techniques described in protocols established for the Southwest Region of the

Forest Service. The intensity of the surveys was based on the anticipated risk associated with the project and the species involved.

III. PROPOSED ACTION

The proposed action includes: (Refer to Project Location Map)

Drilling, completing, and testing at a single exploratory oil well on 3.43 acres in T.1N., R.10E., SW1/4 SW1/4, Section 16, Federal Lease U-24446. Clearing for drilling pad would be approximately four acres.

Restoring 0.8 miles of the Stillwater Road (Forest Road No. 057), improving 2.1 miles of the Peninsula Road (Forest Road No. 306), relocating 2.0 miles of the Main Fork Road, and constructing 0.8 miles of new road to the proposed well site. - Restoration (repairs, some widening, curve straightening, ditch cleaning, etc.) of Stillwater and Peninsula Roads would be limited to the existing road clearing. A few trees directly adjacent to these roads will have to be removed for curve straightening. Relocating the Main Fork Road necessitates making a clearing for the road approximately 30 feet wide by 2.0 miles long. The existing road would then be blocked and reseeded. Construction of 0.8 miles of new road would involve constructing a clearing approximately 30 feet wide by 0.8 miles long.

Constructing one stream crossing (bridge) across Main Fork. Bridge is approximately 60 feet long. This will enable the footings to be placed outside of the narrow band of riparian and wetland habitat associated with the stream.

Constructing a .5 acre gravel source pit in T.1N., R.10E., NE1/4 NE1/4, Section 8 to provide gravel to surface the existing and new roads and well pad.

Drilling a temporary water well on the well pad to provide water for drilling and dust control. This would not require additional clearing but would be located on the drill pad described above.

Reclaiming all surface disturbance at the well site if the well is not successful or partial reclamation if well is successful.

Access into the Peninsula area is now restricted. Once this project is underway, access during construction and drilling would be closed to the general public. Once drilling has been completed, access will be open to the public during the summer season until September 15. Access for construction and drilling personnel would be year-round.

The proposed project is the construction of one exploratory well only. In the event that Chevron proposes that additional wells be drilled, the NEPA process will be conducted concerning effects of all proposed new activities. More surveys and another BA/BE would be completed in this event.

IV. THREATENED, ENDANGERED, AND PROPOSED SPECIES

A letter from the U.S. Fish and Wildlife Service, dated Dec. 13, 1991, confirmed that there are no known threatened, endangered, or proposed species in the project area.

V. SENSITIVE SPECIES, WASATCH-CACHE NATIONAL FOREST

SPECIES	Suitability of Habitat for the Species	
	Suitable	Habitat Unsuitable Based on the Following
spotted bat Euderma maculatum		Habitat types and roost areas lacking in project areas.
North American Lynx Felis lynx canadensis	X	
wolverine Gulo gulo	X	
western big-eared bat Plecotus townsendii		Project areas lack caves and rocky outcrops required for roosting sites.
boreal owl Aegolius funereus		Relatively high density of large trees (12 inch dbh) lacking in project area.
flammulated owl Otus flammeolus	X	
goshawk Accipiter gentilis	X	
three-toed woodpecker Picoides tridactytus	X	
great gray owl Strix nebulosa		Project area lacks open understory, open forests or meadows necessary for easy flight and hunting. (Preferred habitat)
Columbian sharp-tailed grouse Tympanuchus phasianellus columbianus		Project area lacks large areas of native undisturbed shrub-grasslands.
spotted frog Rena pretiosa	X	

Colorado cutthroat trout Oncorhynchus clarki pleuriticus		Not native to Bonneville drainage.
Bonneville cutthroat trout Oncorhynchus clarki utah	X	
King woody aster Aster kingii var. kingii		Occurs on rock outcrops on limestone. Project area lacks preferred habitat of plant species.
mound cryptanth Cryptantha compacta		Endemic to Millard, Beaver, and Tooele counties, Utah.
brownie ladyslipper Cypripedium fasciculatum	X	
maguire draba Draba maguirei		Project area lacks preferred habitat.
Cronquist daisy Erigeron cronquistii		Project area lacks preferred habitat.
Logan buckwheat Eriogonum brevicaule var. loganum		Endemic to Cache County, Utah.
Garrett bladderpod Lesquerella garrettii		Endemic to Davis, Salt Lake, Utah, and Wasatch Counties, Utah.
Rydberg musineon Musineon lineare		Endemic to Cache County, Utah
arctic poppy Papaver radicatum var. pygmaeum		Project area lacks preferred habitat.
Uinta parrya Parrya rydbergii		Project area lacks preferred habitat.
Cache beardtongue Penstemon cyananthus var. compactus		Endemic to Cache County, Utah.
Uinta beardtongue Penstemon uintahensis		Project area lacks preferred habitat.
Uinta greenthread Thelesperma pubescens		Project area lacks preferred habitat.

The preceding table shows the sensitive species that may be found on the Wasatch-Cache National Forest. Those species with potential to occur in or near the project area are indicated. The determination that there is a potential for occurrence of these species in the project area is based primarily on habitat preferences (U.S.F.S. 1991a) and the availability of such habitat in the project area.

Habitat Requirements and Determination of Effects for Species with Potential to Occur Within the Project Area:

North American lynx

Habitat Requirements

The range of the North American Lynx includes the Evanston District of Wasatch-Cache National Forest (USFS, 1991a). Lynx generally inhabit high elevation lodgepole pine, mixed conifer, or spruce/fir forests where there are high populations of snowshoe hares, their primary prey. Lynx home ranges are 6-8 square miles or larger. Burned or logged areas exhibit high use by snowshoe hares (Koeler, 1988 and Saunders, 1963). Hares appear to select areas where conifer regeneration is occurring for their forage, and escape and thermal cover qualities (McKay, 1991). Snowshoe hare habitat includes high elevation riparian areas where they forage on grasses, sedges, and forbs. Although lynx forage in these areas for hares, lynx are sensitive to forest fragmentation and require connecting corridors of mature timber (USFS, 1991a). They will forage in openings up to 25 acres in size, but usually stay within 300 feet of cover (Koehler and Brittell, 1990). One unconfirmed lynx sighting is documented in the Christmas Meadows area (1976), this is on record in the Utah Division of Wildlife Resources Rare Mammal Sighting Program (McKay, 1991).

Determination

Surveys to determine lynx presence or absence in the project area were not recommended due to the high cost of these surveys and the limited information that would be derived. Since these animals have large home ranges, positive results would establish presence at a point in time, and would serve to reinforce the belief that the area contains suitable habitat. Failure to detect any sign of lynx presence does not establish that the animal is not using the area, since the probability of trapping or photographing species with large home ranges is extrememly low.

The area contains an abundance of mature timber that provides connecting corridors of cover. This proposed project will remove a 4 acre clearing for the drilling pad and clear approximately 10 acres for the road location. These openings will not restrict lynx use of the area. The new road access into the Main Fork will increase human presence into the area, but that use will be restricted to mid-late summer only due to snow and seasonal road closures. This timing should not conflict with potential lynx use of area as lynx would be expected to move to higher locations at that time of year.

It is my determination that, for the reasons discussed above, this project "may impact individuals, but is not likely to cause a trend toward federal listing or a loss of viability" to the lynx population.

Wolverine

Habitat Requirements

The historic range of the wolverine includes the North Slope of the Uinta Mountains of the Wasatch-Cache National Forest (USFS, 1991a). The wolverine inhabits tundra and coniferous forests generally at higher altitudes during summer, and mid to lower elevations during winter. Low elevation riparian areas may be important habitat during the winter. Wolverine home ranges can be as large as 175 square miles. They will forage in a variety of age classes of forest (Thomas, 1979), but generally avoid large meadows and clearcuts, so they are sensitive to forest fragmentation but do not require old growth forests. Wolverines obtain their food in a variety of ways: by capturing their own prey, stealing food from larger carnivores, or scavenging carrion. They prey most often on small mammals, but can capture large prey hindered by deep snow. Small mammal prey species for the wolverine are primarily mice, voles, and shrews. Greater numbers of these prey species live in meadow plant communities associated with later seral stages and greater vegetation species diversity (Maser et al, 1984). One unconfirmed wolverine sighting has occurred near the North Fork Mill Creek area. (McKay 1991).

Determination

Surveys to determine wolverine presence or absence in the project area were not recommended for the same reasons discussed previously for lynx. Wolverine also have very large home ranges which makes surveying difficult.

The road construction proposed in this project will include a new road built outside of the riparian zone with one crossing of the Main Fork at the upper end of the project area. Currently there is a jeep trail accessing this area that runs within the riparian zone and crosses the Main Fork several times. Moving the road out of the riparian zone will be an improvement to potential wolverine habitat as riparian habitat is most commonly used when wolverine are are at lower elevations. Increased human presence in the previously unroaded areas is not expected to impact wolverine use, as with the lynx, the human use will not occur during the winter months when wolverines would move to mid and lower elevations.

It is my determination, based on the above discussion, that this project "may impact individuals but is not likely to cause a trend toward federal listing or a loss of viability" of the wolverine population.

Flammulated Owl

Habitat Requirements

Inhabits forests of the western mountains, mostly from 4,500 to 7,800 feet but as high as 10,000 feet elevation. These owls prefer woods with dense, thicket-like cover close to relatively open areas and favor ponderosa pine forests but also occur in forests of spruce-fir, Douglas-fir, lodgepole pine, aspen, and pinyon-juniper. (USFS 1991d). Nests are usually found in abandoned flicker or other woodpecker nest cavities from 7 to 25 feet above ground in aspen, oaks, or pines. (USFS 1991a). Large diameter (> 20 in.) dead trees with cavities at least as large as northern flicker cavities are important nest site characteristics. They avoid foraging in young dense stands where hunting is difficult. Territory size varies from 20-59 acres and is determined by age and patchiness of overstory trees. Its avoidance of cut-over areas suggest that it may be threatened by clearcutting and cutting of mature trees. (USFS 1991a).

Determination

A survey for flammulated owls was conducted in the immediate project area. The survey consisted of walking transects and playing a tape of the flammulated owl's call at specified stations. The survey was conducted May 27 and 28, 1992, with calling stations located 1/2 mile apart along the proposed road location starting at the Peninsula bridge and ending up at the proposed drill site (copy of protocol, survey results and map are on file at the District office).

No owls were located during the surveys of the project area. Flammulated owls have not yet been documented on the Evanston Ranger District. They could potentially occur in the project area, but the small amount of habitat loss associated with this project would not create a significant habitat loss for this species. The surrounding landscape contains undisturbed stands of spruce-fir, aspen, and lodgepole suitable for foraging and nesting flammulated owls. It is my determination that the proposed action "may impact individuals, but is not likely to cause a trend toward federal listing or a loss of viability" of the flammulated owl population.

Northern Goshawk

Habitat Requirements

Northern goshawks are known to occur in the Bear River drainages of the Uinta Mountains. Their habitat can include lodgepole pine, mixed conifer, aspen, and riparian areas. The following information concerning goshawks and their management is from Management Recommendations for the Northern Goshawk in the Southwestern United States (USFS, 1991b). Management recommendations for the goshawk are currently being developed for the Intermountain Region, but are not yet available.

The goshawk is a forest habitat generalist that uses a wide variety of forest ages, structural conditions, and successional stages. The goshawk preys on large-to-medium sized birds and mammals which it captures on the ground, in trees, or in the air. Three components of a goshawk's home range (total about 6,000 acres) have been identified: nest area, post-fledgling family area (PFA), and foraging area.

The nest area (approximately 30 acres), which may include one or more nests, are usually located on northerly aspects in drainages or canyons, and are often near streams. Nest areas contain one or more stands of large, old trees with a dense canopy cover. Most goshawks have two to four alternate nest areas within their home range; alternate nest areas are used in different years and some may be used for decades. Management recommendations for nest areas state that three suitable nest areas should be maintained per nesting home range. In addition, three replacement areas should be developed and maintained per home range because suitable areas may be lost due to insects or catastrophic fire. This equates to blocks of nesting habitat totaling 180 acres per home range.

The goshawk PFA surrounds the nest areas within a home range. It totals 420 acres and most often, because of it's size, includes a variety of forest types and conditions. The PFA appears to correspond to the territory (defended area) of a goshawk pair, and represents an area of concentrated use by the family after the young leave the nest and until they are no longer dependent on the adults for food (up to 2 months). The PFA contains a variety of forest conditions and prey habitat attributes. Small openings, snags, downed logs, and woody debris are critical PFA attributes. To sustain the desired canopy cover, size of trees, and the specified proportions of different forest ages within the PFA, forest regeneration in small patches is required every 20 to 30 years (not to exceed 10% of the PFA). Other management practices (e.g., prescribed fire, removing understory trees) are suggested for sustaining other critical elements of goshawk habitat. Small openings (less than 2 acres) in the forest are desired habitat for some prey species and are required for forest regeneration. If openings are greater than 0.5 acre in mixed-species forests, and 0.3 acre in spruce/fir forests, up to six large mature and/or old trees (reserve trees) should be left in regenerated openings.

Goshawk foraging areas are approximately 5,400 acres in size. Foraging goshawks are more often than not confronted with a mosaic of forest types and conditions within their large home ranges. Observations of foraging goshawks show that they hunt in many forest conditions. This opportunism suggests that the choice of foraging habitat by goshawks may be as closely tied to prey availability as to habitat structure and composition. Selected goshawk prey include squirrels, chipmunks, woodpeckers, jays, rabbits, and grouse. Specific habitat attributes used by these species include the following: snags, downed logs, woody debris, large trees, herbaceous and shrubby understories, and a mixture of various forest vegetation structural stages. Abundant prey populations within goshawk foraging areas will occur when 1) the specific habitat attributes are provided, 2) forests contain large trees and have relatively open understories, 3) forest openings are small-to-medium in size, 4) patches of dense, middle aged forests are scattered throughout, and 5) the majority of

forests are in the middle aged, mature, and old age classes. Management recommendations include managing for a more open canopy (40% in middle aged forests, and 50-60% in mature and old forests) because the foraging area need not provide hiding cover for fledgling goshawks. Medium openings(less than 4 acres) for understory development and tree regeneration are desired in mixed-species forests while smaller openings are desired in spruce-fir forests.

Determination

The immediate project area and surrounding areas were surveyed for goshawks in 1992 by a wildlife consultant and by researchers from Brigham Young University. The recommended survey protocol of walking transects and playing a tape of both the goshawk's alarm call and fledgling call was used (copies of the survey results are located in the District files). Active goshawk nests were discovered in Section 5 and 15, T1N R10E. Both nests fledged at least one young. Surveys of the nest sites in 1993 (USFS) found that neither nest was active that year. Nest searches in the area for alternate, possibly active, nests did not detect any active nesting.

The nest in Section 5 is located near the Pennisula Road (Forest Road 306). The proposed action calls for using the existing Peninsula Road after some limited upgrading and curve straightening. This road passes through the nest area and the PFA for this nest. The road work within the PFA will be confined to the existing road prism, except during curve straightening where additional clearing on the inside of the curve is needed. Road construction activities within the PFA will be scheduled after September 1 during years of active nesting. Approximately one mile of new road will be constructed within the foraging area for this nest. The opening created by this new construction does not conflict with management recommendations for openings within foraging areas.

The goshawk nest in Section 15 is approximately 1.5 miles NE of the proposed drilling pad. None of the activities related to this project will occur within the nest area or PFA for this nest. The drilling pad (4 acres) and approximately 1/2 mile of new road construction is proposed within the foraging area. The size of this opening does not conflict with the recommended management recommendations.

An additional goshawk nest is located approximately 4 miles north of the proposed well site (T2N R10E Sec.28). This nest was active in 1992 and not active in 1993. The proposed project will not impact this nest site.

There is the potential for goshawks using the nest in Section 5 to be impacted by activities associated with the proposed action. Construction activities are not expected to begin until mid-July. The concern then, is for disturbance to nesting birds and young at the time of year they are expected to fledge from the nest. In addition to the timing restriction on road re-construction activities in the PFA, the following mitigation measures are recommended to minimize impacts (disturbance) to nesting goshawks:

1) All heavy equipment hauled through the PFA (to be used in road construction outside the PFA) should be brought in during mid-day (10AM-3PM). This will minimize disturbance to nesting birds during peak feeding periods.

2) Construction personnel should minimize traffic to the site by carpooling.

3) All vehicle speeds should be kept under 20 mph and no engine brakes should be used in the PFA.

4) Vehicles should not be allowed to stop within the nest area, except for emergencies.

5) Vegetation removed in road re-construction within the nest area should be kept to a minimum and within the existing road prism.

6) Public use of the Pennisula Road should be restricted during years of active nesting at the nest in Section 5.

These mitigation measures are included to further reduce any impacts of disturbance to nesting goshawks. These measures should be implemented in years of active nesting only. Active nesting will be determined by a qualified wildlife biologist monitoring the site during the month of June.

It is my determination that, with the previously described mitigation measures implemented, this proposed action "may impact individuals, but is not likely to cause a trend toward federal listing or a loss of viability" of the goshawk population.

Three-toed woodpeckers

Habitat Requirements

Three-toed woodpeckers are an uncommon, year-round resident throughout their range which includes the North Slope of the Uinta Mountains (USFS, 1991a). Their habitat consists mainly of mature and old growth mixed conifer and lodgepole pine forests. Home ranges of breeding pairs can be up to 75 acres. They feed primarily on wood-boring insect larvae, especially spruce beetle larvae, on dead trees. Fire-killed trees provide a major food source. Three-toed woodpeckers require dead trees (snags) for feeding, perching, nesting, and roosting. They are sensitive to forest fragmentation by clearcutting if snags are not retained (USFS, 1991a). Therefore, snag retention, especially "hard" snags with the bark intact, is recommended in forest management actions to provide habitat for this species. Clumps of snags with a diameter at breast height (dbh) of 12-16 inches should be left at a density of 42-52 acres per 100 acres (USFS, 1991a).

Determination

The proposed project area was surveyed for three-toed woodpeckers during the morning hours on May 25, 26, 27, and 28, 1992. The survey method consisted of walking transects and playing a tape of three-toed drumming at all stations. Survey stations were located 1/4 mile apart along the proposed road location, and also 1/4 mile on either side of the stations along the road, resulting in an area surveyed of a 1/4 mile buffer strip along the road and proposed drill pad (a copy of the survey protocol, survey, and map are filed at the District office).

No three-toed woodpeckers were found within the analysis area during this survey. Continuous stands of lodgepole pine and spruce-fir, containing snags, exist in the landscape surrounding the proposed project area. Three-toed woodpeckers could potentially occur in the project area, but the small amount of habitat loss associated with this project would not create a significant habitat loss for this species. It is my determination that the proposed action "may impact individuals, but is not likely to cause a trend toward federal listing or a loss of viability" of the three-toed woodpecker population.

Spotted frog

Habitat Requirements

Spotted frogs are most commonly found near permanent water, such as marshy edges of ponds or lakes, in algae-grown overflow pools of streams, or near springs with emergent vegetation during the breeding period. They may move considerable distances from water after breeding, often frequenting mixed-conifer and subalpine forests, grasslands, and brushlands of sage and rabbitbrush. Spotted frogs are thought to hibernate in holes near springs or other areas where water is unfrozen and constantly renewed. Management recommendations include protecting riparian areas from overgrazing, and protecting permanent water sources (USFS, 1991a).

Determination

The proposed action avoids all permanent water sources except where the access road crosses the Main Fork. A bridge will be installed for this crossing. The footings which support the bridge will be placed at least five to six feet back from the stream banks to reduce impacts to the riparian zone. It is my determination that the proposed action "may impact individuals, but is not likely to cause a trend toward federal listing or a loss of viability" of the spotted frog population.

Bonneville cutthroat trout

Habitat Requirements

Bonneville cutthroat trout are known to reside in McKenzie and Carter Creeks (Wasatch-Cache National Forest Stream Catalogue) approximately six to seven miles to the northeast. These trout require cool, clear water throughout their lives. Optimum habitat characteristics include areas with a 1:1 pool to riffle ratio and slow, deep water with vegetated streambanks

for shade, bank stability, and cover. They prefer water temperatures of about 55 F, but can survive in water up to 70 F. Bonneville cutthroat may also inhabit lakes. Loss of habitat from man-made causes such as water diversions, overgrazing of riparian areas, timber harvest, and water pollution have contributed to the decline of this sub-species. Hybridization with introduced non-native trout has resulted in the loss of genetic purity. Management recommendations include stream habitat improvement and protection from non-native trout introductions (USFS,1991a).

Determination

The proposed project does not directly impact the Main Fork. The bridge that will cross the Main Fork was designed with footings placed 6 feet from the stream banks to reduce any possible impacts to the Main Fork. As a mitigation to constructing the new road, an existing jeep trail (old road) that fords the Main Fork several times will be obliterated and revegetated. This will improve potential habitat for the Bonneville cutthroat trout.

Bonneville cutthroat are not known to exist in the Main Fork system. The Main Fork is a tributary to the Stillwater Fork which is stocked with non-native trout, as is Hell Hole Lake which feeds directly into the Main Fork. It is my determination that this project "may impact individuals, but is not likely to cause a trend toward federal listing or a loss of viability" to the Bonneville cutthroat trout population.

Brownie ladyslipper

Habitat Requirements

This plant grows in duff in spruce-fir or lodgepole pine forests and along shaded streams between 7,940 to 9,840 feet in elevation. It blooms in June and July. Populations of this plant have usually been found in forest stands where there is very little other herbaceous vegetation (USFS, 1991c).

Determination

Surveys for brownie ladyslipper were conducted in the project area by walking transects back and forth through the area. No plants of this species were located. It is my determination that the proposed action "may impact individuals, but is not likely to cause a trend toward federal listing or a loss of viability" of the brownie ladyslipper population.

MONITORING

The following monitoring for the northern goshawk nest located in Section 5, T1N R10E should be included as part of the project:

1) Active nesting should be determined by June 30 each year to implement restrictions as necessary. If the nest is not active, nest searches will be conducted to locate alternate active nests in the area. Restrictions on activities that could impact nesting goshawks will be implemented as necessary.

2) A qualified individual should monitor the nest during construction activities in coordination with a Forest Service wildlife biologist.

3) A guard from Chevron will be in place at the gate during construction and drilling activities. A log of daily traffic volume will be kept and should be used to document the level of use on the Pennisula Road.

Prepared by:

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APPENDIX J – WETLANDS DELINEATION AND ANALYSIS REPORT

APPENDIX J - WETLANDS DELINEATION AND ANALYSIS

INTRODUCTION

A survey of the Table Top Prospect Project area was conducted to identify wetland areas that potentially could be affected by the activities (construction, operation, and maintenance) of the Table Top Prospect Exploratory Oil Well Project proposed by Chevron U.S.A. Production Company, a division of Chevron U.S.A. Inc. The need to conduct a detailed wetland survey was identified during natural resource investigations that were undertaken for the *Environmental Impact Statement, Exploratory Oil Well, Chevron Table Top Prospect* prepared by the Wasatch-Cache National Forest.

The proposed project consists of an exploratory oil well and access road to the well site located on the Wasatch-Cache National Forest, Evanston Ranger District, Summit County, Utah, within the drainage of the Main Fork of the Stillwater. Two alternative well sites were considered:

- T1N R10E SW 1/4 SW 1/4 Section 16 (Alternative Well Site A, proposed)
- T1N R10E NW 1/4 NE 1/4 Section 21 (Alternative Well Site B)

Access to the selected well site would be via the existing Peninsula Road and new road along the Main Fork that would cross this drainage west-east in the SE 1/4 of Section 17. Approximately 2.1 miles of Peninsula Road (Forest Road No. 306) would be improved, 2 miles of the Main Fork Road would be relocated, and .8 mile of new road would be constructed, along a particular grade and contour, to Alternative Well Site A. An additional 1.5 miles of road would be constructed from Alternative Well Site A to Alternative Well Site B (if the latter alternative were selected).

Construction of the well site would disturb approximately 3.4 acres and the road work would disturb about 13.43 acres to Alternative Well Site A and 19.77 acres to Alternative Well Site B.

The objectives of this work included:

1) delineating wetlands that occur in the vicinity of the proposed project area as defined by the U.S. Army Corps of Engineers (COE);

2) describing the salient vegetation, hydrology, and soil characteristics of each wetland;

3) assessing whether the delineated wetlands would be affected by the proposed project; and

4) developing means to avoid or reduce impacts to wetlands.

PERMIT REQUIREMENTS

Wetlands are protected by Section 404 of the Clean Water Act (1972, as amended), and by Executive Order 11990, Protection of Wetlands, which requires federal agencies to take action to avoid impacts to wetlands whenever possible. Construction activities that are considered to be dredge and fill in "waters of the United States" and jurisdictional wetlands require a Section 404 permit from the U. S. Army Corps of Engineers (COE). The proposed project could potentially affect wetlands that occur at the alternative well sites and along the planned access road.

Such effects must be evaluated and authorized under Section 404 of the Clean Water Act, and would require an individual permit as the subject waters are part of a five cubic-feet-per-second waters of the United States. An individual permit application requires that affected wetlands be identified and characterized, and the area be delineated. Means to avoid or reduce impacts need to be evaluated and mitigation measures to offset impacts must be developed as part of the permit application.

If discharge into wetlands is between one and ten acres, this application must be in compliance with the 401(b)(1) guidelines and requires a Predischarge Notification (PDN) for COE review. A PDN includes a description of the project, an assessment of potential impacts, a discussion of alternatives considered, identification of least damaging alternatives and unavoidable adverse impacts, and mitigation measures to reduce such impacts.

METHODS

A series of sequential tasks were used to delineate wetlands in the vicinity of the proposed project area. These tasks are as follows:

- Aerial-photograph interpretation and initial wetland delineation adjacent to proposed development. Wetland map units were drawn on 7.5-minute USGS topographic maps or on large-scale topographic project maps.

- Field check initial delineations and obtain data on vegetation, soils, and hydrology using multiparameter techniques specified by the COE (1987). Vegetation cover was visually estimated for each species in the apparent wetland area and their indicator value (e.g., obligate or facultative to wetlands) was ascertained (Reed 1988). Soil characteristics include presence of gleying or mottling (as determined from Munsell color charts), amount of organic matter, presence of sulfitic material, and to determine if hydric soils are present. Moisture regimes (e.g., aquic or peraquic) of the soil also was determined, along with hydrologic characteristics that included evidence of saturation and flooding and drainage topography. Data to determine hydrology was recorded at each site, and included evidence of inundation – saturation, water depth or depth to water within top 20 inches, flood evidence (i.e., high-water mark) topography (e.g., basin, channel, etc.).

- Revise wetland map-unit boundaries on maps as required from field work on 1-inch- to 1000-foot-scale topographic maps.

RESULTS

Wetland Types Wetlands that were recognized from aerial photograph interpretation consisted of the larger streams (e.g., Main Fork), and larger ponds and meadows that were indicated by a change in vegetation pattern and color on the photography. Because of the small scale of the aerial photography, small secondary drainages, seeps and small marshes were detected during field investigations. Many of the smaller wetlands are overshadowed by a forest canopy and were not evident on the aerial photographs.

Based on the classification of Cowardin *et al.* (1979), two wetland systems are represented in the project area; riverine and palustrine. The riverine system includes wetlands that are confined to a channel, the Main Fork, which was classified as upper perennial with a cobble/gravel streambed (R3SB1 map unit). The wetland extends from the active stream channel onto the lower terrace that varies in width from less than six inches to approximately four feet (Figure 1B). Dominant plant species of the lower terrace in the area of the proposed road crossing include monkshood (common names follow Goodrich and Neese 1986),

arrow-leaf groundsel, baltic rush, smallwing sedge, and millet woodrush (Table 1, Site 1). All of these species are either obligate or facultative to wetland conditions (Reed 1988). Moreover, soils of the lower terrace were moist, contained organic matter, and were mottled, which are indicative of saturated conditions (field observation records are provided in Appendix A).

Seeps, springs, and small ponds that are scattered throughout the area were classified as palustrine wetlands that contain vegetation, or are less than eight hectares (20 acres) and water depth is less than two meters. Many of these wetlands are characterized by corn lily and arrow-leaf groundsel (Figure 1A), although sedges and rushes also are dominant where surface water persists throughout most of the growing season. A series of relatively large wet meadows (Palustrine, Emergent/Scrub Shrub, or emergent only, saturated: PEM/SSB and PEMB map units) occur adjacent to the Main Fork in conjunction with level areas and infilled beaver ponds (e.g., Sites 2,6,7: Table 1). Corn lily characterizes these areas, but water sedge is especially dominant where surface water was evident during field investigations (Sites 6,7). Soils were composed primarily of peat with a fibric surface layer, and either were moist or contained a water table within the first 20 centimeters (12 inches) (Appendix A). Wetlands composed primarily of herbaceous species were classified as emergent (i.e., indicating PEMA - B, with the moisture modifier (B) saturated conditions).

Several small seeps/springs were observed on the slopes west of the Main Fork in the area of the proposed road. Corn lily also characterizes most of these wetlands (e.g., Site 4) that contained some flow down slope from several ponds, but other prominent species varied among sites. For example, Site 3 also was characterized by larkspur, northern bog orchid, and monkshood (Figure 1A and Table 1). Site 5 was dominated by arrow-leaf groundsel and larkspur, but also contained white wild geranium and peregrine fleabane, indicating a variable moisture regime within the wetland area. The wetland at this site is approximately 10 meters by 15 meters (33 feet by 50 feet) in size.

Sedges dominate wetlands that contain surface water through much of the growing season. The Site 9 (Figure 2B) wetland typifies this type, which is located immediately to the east of the proposed Alternative Well Site A. The vegetation is dominated by water sedge (70 to 80 percent), with lesser amounts of corn lily and arrow-leaf groundsel along the drier margins.

The wetland here is relatively narrow, but extends approximately 100 meters (328 feet) in a north-south direction and parallels the edge of the area proposed for the well pad. A similarly vegetated wetland occurs near the southern extent of the proposed access road where the route bends back to the north to approach Section 16 (Figure 2A). This wetland is also dominated by water sedge (70 to 75 percent) with lesser amounts of arrow-leaf groundsel and willow (Table 1, Site 8), and contains saturated peat soil.

Wetlands in the area of the Alternative Well Site B consist of emergent-scrub shrub meadows that interfinger among stands of conifer forests (Figure 3B). Scattered willow and shrubby cinquefoil provide an aspect dominance to the wetland, but sedges (e.g. *Carex microptera*) compose most of the vegetative cover (Table 1, Site 12). The water table was near the surface, and soils contained organic inclusions and mineral horizons were mottled (See Appendix A, Site 12).

A small pond (about one-half acre) occurs approximately one-fourth mile east of the proposed Alternative Well Site A (Figure 3A). This wetland is dominated by open water, with a prominent cover of pondweed on the periphery where water is less than 0.6 meters (two feet) deep. It was classified as Palustrine with permanent open water (POWH, Figure 3A, Site 10).

Potential Impacts and Mitigation Most of the wetlands delineated in the project area would not be impacted by construction of the access road, well pad, and ancillary facilities. This conclusion is based on the amount of distance that occurs between proposed disturbances and the various wetlands. Exceptions

occur along the proposed access road in the area from Station (STA) 66 + 32.30 to 70 + 51.50 where the proposed road is relatively close (10–15m) to several wetland seeps (Plate 1). Wetlands in this area were designated as Sites 3 and 5, and are generally small (5 meters by 15 meters). It is recommended that they be avoided by the road and no fill will be placed in such areas. Care must be taken that placement of the road does not intercept or redirect drainage to these wetlands or that drainage to other wetlands downgradient likewise is not affected. Culverts will be installed as necessary in accordance with the typical drawing shown in Figure 4. Means of spreading drainage from the road will be implemented (e.g., lateral ditch and outlets) and sedimentation barriers (e.g., straw bales, slash) will be used at the base of the road to protect downslope wetlands from soil erosion.

A bridge has been specified to cross the Main Fork. A temporary bridge, 30 feet long, would be installed to protect the water quality and riparian vegetation on either side of the stream. Wetlands adjacent to the active channel are narrow and no direct impacts are anticipated from bridge construction. All wet areas and riparian vegetation would be avoided and an undisturbed buffer of vegetation would be left between these areas and the road to assist in controlling runoff from the road. Berms on the road approach to the bridge should be constructed to control erosion from the road and to protect the stream from sedimentation during periods of heavy runoff. Siltation fences should be used, as necessary, to protect the stream from erosion during construction. Once the stream is crossed and construction continues to the east, a 60–foot–long bridge, satisfying Forest Service standards, over the Main Fork would then be installed. The bridge would be set on treated timber or concrete sills. To minimize the need for rip rap and other channel–infringing activities, the sills would be set back at least five feet from the existing stream bank. Bridge elevation and bank protection would be the minimum needed for a 10–year flood with no stream–flow constriction and would accommodate a 50–year flood.

The road will have to cross one wetland in the vicinity of STA 80 + 11.60, which consists of springs and a small drainage system that extends across the slope from a marsh toward the Main Fork. This area was designated as Site 4 during field investigations. The natural drainage will be maintained with a French drain, which will convey water beneath the road from west to east. Construction of the road in this area will fill approximately 3,000 square feet (.07 acre) of wetlands (22–foot road width across 133 feet of wetlands). Replacement of the area lost must be designated as part of project development plans and submitted to the COE for review and approval prior to construction. The most practical means to offset wetland losses is to restablish wetlands on the jeep/pack trail road during reclamation measures that are specified for this road as part of project requirements. Areas (depressions) of this road that occur near the Main Fork currently hold water year round (refer to Figure 5). Wetland reclamation measures for this road include ripping operations to reduce compaction and transporting soil and plant material to the area from other wetland sites that would be affected (e.g., STA 80+11.60) to facilitate vegetation establishment.

Other methods of offsetting wetland losses include channeling drainage from the road into existing wetlands (e.g., STA 66+32.30) or into constructed basins to hold water. Reclaiming wet areas of the jeep road and expanding existing wetlands with additional water would require less effort than establishing new wetlands. Conservative measurements indicate approximately 13,000 square feet of wetlands would be reestablished this way.

With the exception of the proposed Alternative Well Site B, the other wetlands delineated in the project area would not be impacted directly by project activities. The wetland at Site 8 is approximately 50 meters (160 feet) from the proposed road location, and similarly, the wetland described as Site 9 is approximately 30 to 50 meters (100 to 160 feet) from the edge of the Alternative Well Site A pad. In such areas, erosion–control measures will be implemented to protect wetlands from sedimentation. These measures include using channel bars on the road to collect runoff at particular points (approximately every 400 feet), where slash will be used to spread the water as it exits the road.

Filtration material (e.g., straw bales) will be placed between construction sites and wetlands as needed to reduce sedimentation potential. Similar erosion control measures will be installed on the east side of the Alternative Well Site A pad. Moreover, sediment basins and sediment fencing will be used as necessary to prevent sediment from entering the wetland in this area.

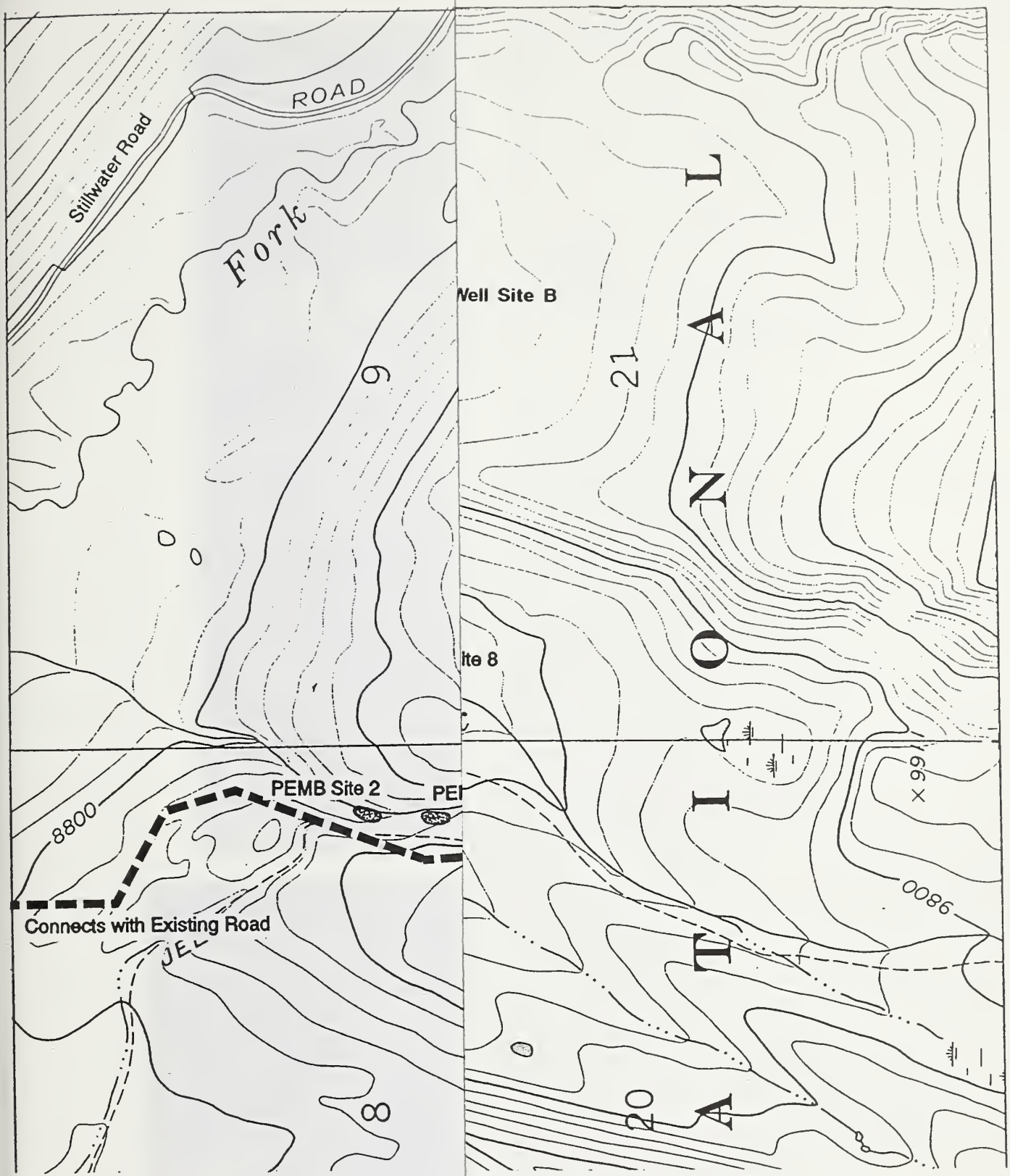
Constructing a well pad at Alternative Well Site B would fill at least one acre of palustrine wetlands. Such an impact would need to be mitigated through creation of wetlands of the same function and value, or by establishing additional acreage through reclamation of degraded wetlands. Additional water would be needed in order for new wetlands of this size to be developed on site. Because of the uncertainty of developing a permanent water source, and the impacts resulting from wetland losses until a replacement wetland would be functional, Alternative Well Site A is preferred to Alternative Well Site B.

LITERATURE CITED

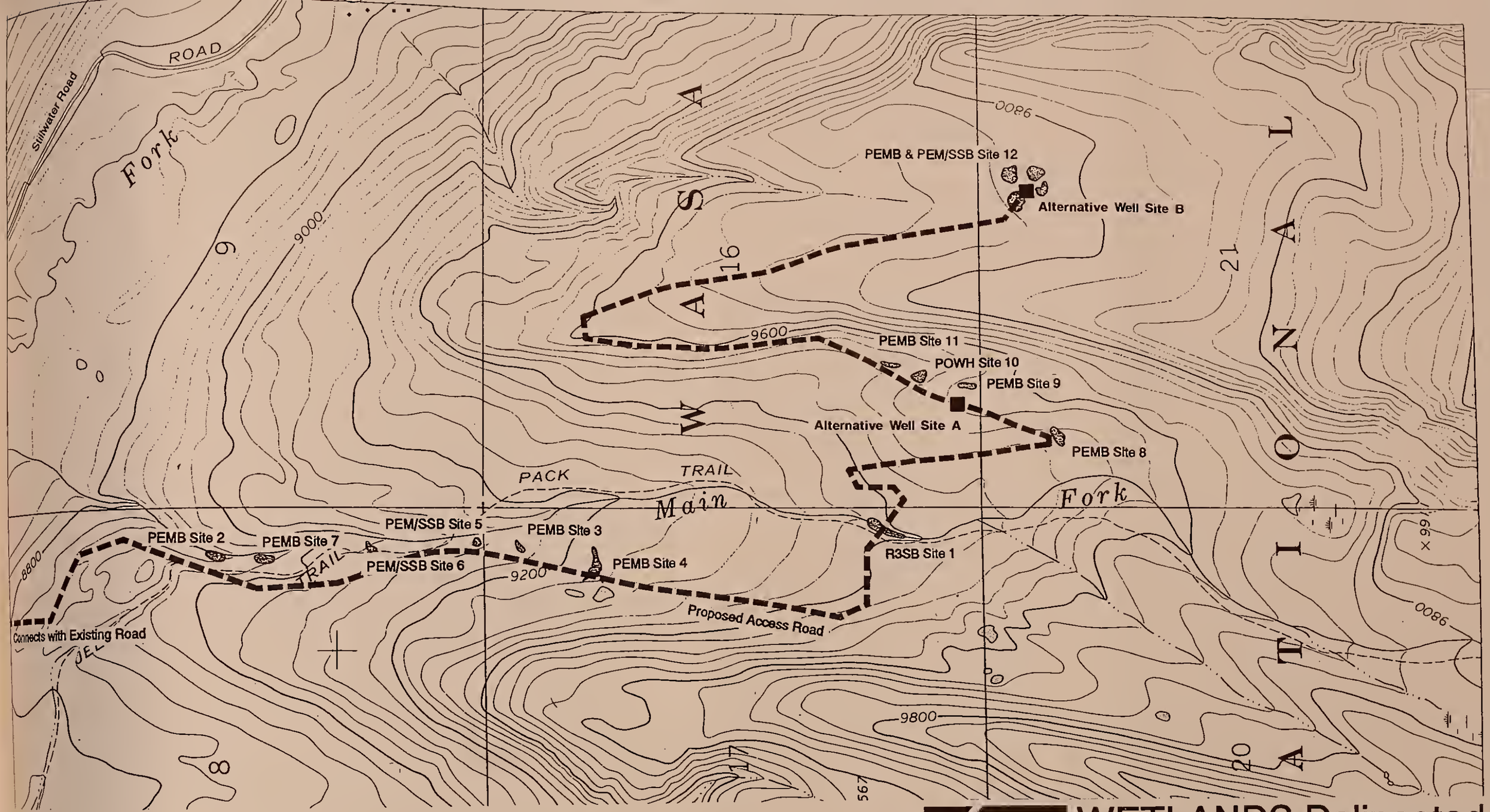
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ETLANDS Delineated
the Table Top
ospect area



WETLANDS Delineated in the Table Top prospect area

PLATE 1



Figure 1A. Cornlily-dominated wetland near STA 70+51.50 (Site 3).

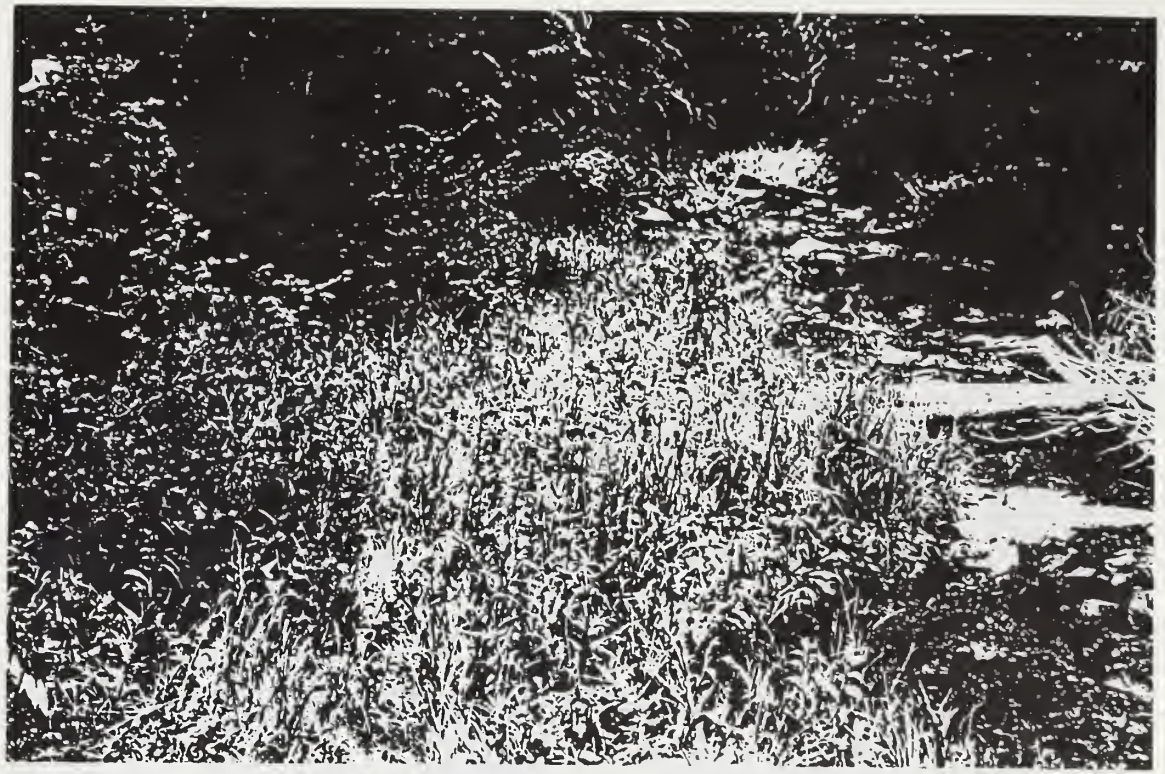


Figure 1B. Proposed crossing of the Main Fork. The wetland is characterized by arrowleaf groundsel and rush (Site 1).







Figure 2A. Sedge-dominated wetland south of proposed access road (Site 8).



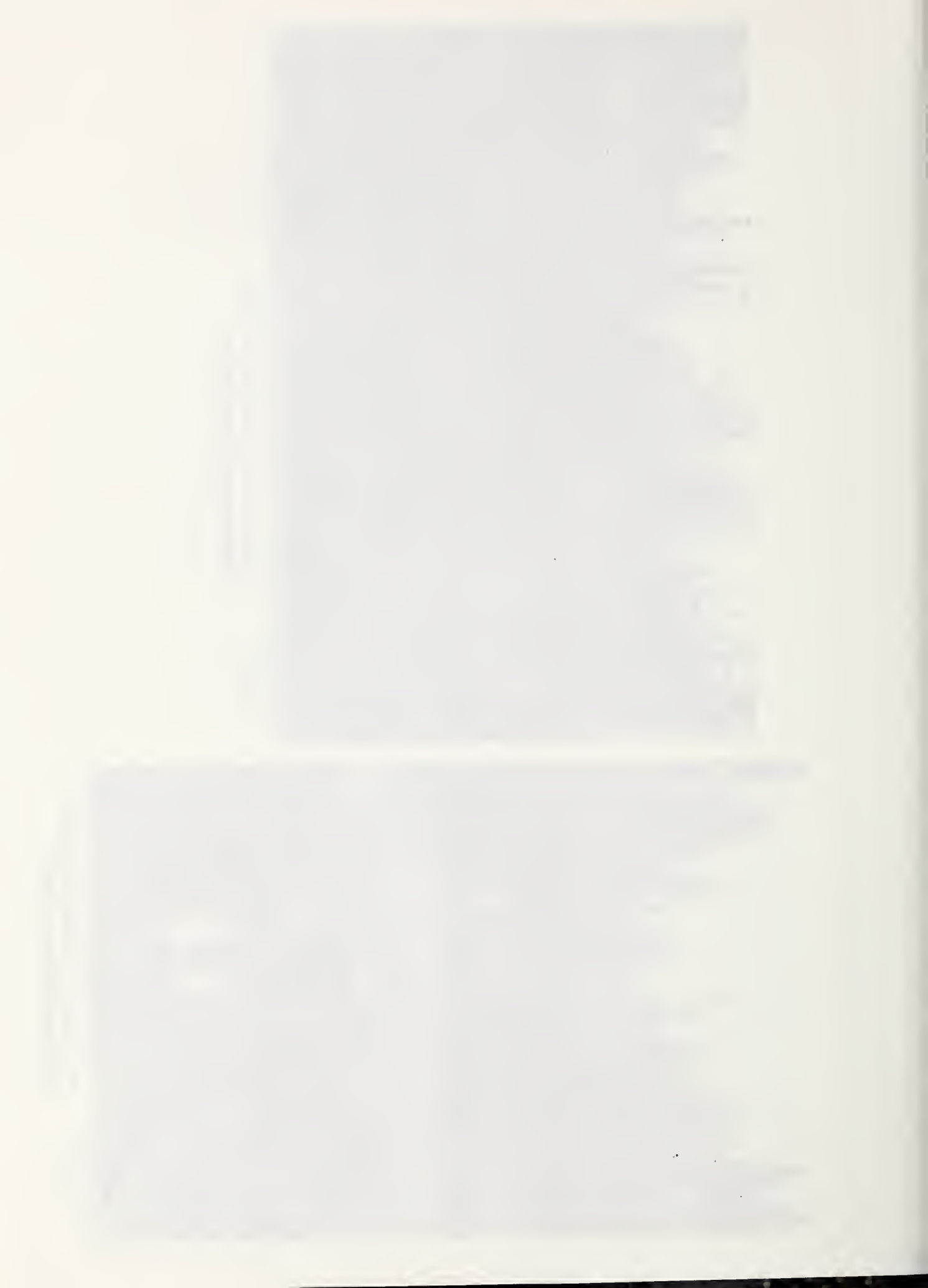
Figure 2B. Narrow wetland east of proposed Alternative Well Site A dominated by Cornlily (Site 9).



Figure 3A. Pond about 1/4 mile east of proposed Alternative Well Site A (Site 10).



Figure 3B. Sedge-dominated wetlands in the vicinity of Alternative Well Site B (Site 12).



Appendix A

Field Data Forms

APPENDIX A

COE DATA FORM 1
WETLAND DETERMINATION

Applicant Name: Chevron Application Number: _____ Project Name: Table Top

State: UT County: _____ Legal Description: Township _____ Range _____

Date: 7/14/92 Plot No.: Site 1 Section _____

Proposed Stream Crossing - Wetland varies from 0 to about 4' in width on bank

Vegetation [list the three dominant species in each vegetation layer (5 if only 1 or 2 layers).

Species	Cover %	Indicator Status	Species	Cover %	Indicator Status
Trees			Herbs		
1.			1. Aconitum columb	25	FACW
2.			2. Senecio triangul.	12	OBL
3.			3. Veronica anteric.	1	OBL
~~Saplings/shrubs~~			~~Woody Vines~~		
1. Dodecatheon pulchell.	2	FACW	1. Juncus arcticus	10	FAW
2.			2. Carex microptera	12	OBL
3.			3. Luzula parviflora	10	FAC

% of species that are OBL, FACW, and/or FAC: 80 Other indicators: _____

Hydrophytic vegetation: Yes X No ____ Basis: _____

Soil

Series and phase: _____ On hydric soils list? Yes ____ No ____

Mottled: Yes ✓ No ____ Mottle color: 5YR 5/8 Matrix color: 10YR 2/1

Gleyed: Yes ____ No ✓ Other indicators High organic content throughout, wetness

Hydric soils: Yes ✓ No ____ Basis: mottling, matrix color, organic content

Hydrology

Inundated: Yes ____ No ____ Depth of standing water: _____

Saturated soils: Yes ____ No ____ Depth to saturated soil: 0 - 4"

Other indicators: _____

Wetland hydrology: Yes ✓ No ____ Basis: _____

Atypical situation: Yes ____ No ____

Normal Circumstances?: Yes ____ No ____

Wetland Determination: Wetland X Nonwetland _____

Comments: _____

Determined by: FJK, DCM

APPENDIX A

COE DATA FORM 1
WETLAND DETERMINATION

Applicant Name: Chevron Application Number: _____ Project Name: Table Top

State: UT County: _____ Legal Description: Township _____ Range _____

Date: 7/14/92 Plot No.: site 2 Section _____

First Crossing of OR TRAIL

Vegetation [list the three dominant species in each vegetation layer (5 if only 1 or 2 layers].

Species	Cover %	Indicator Status
Trees		
1.		
2. E. Spruce	10	FACU
3. Lp pine	5	FACW
Saplings/shrubs		
1. Salix(low)	25	FACW
2.		
3.		
Herbs		
1. Sedge (Bar) C. microptera	30	OBL
2. Sedge (long)	15	FACW
3. Juncus arcticus	5	FACW
~~Woody vines~~ longifolia	2	FAC
1. Arnica(narrow)		
2. Sedum (red) rhodanthum	2	FACW
3. Senecio triangularis	1	OBL

% of species that are OBL, FACW, and/or FAC: 7/9 Other indicators: _____

Hydrophytic vegetation: Yes ✓ No ____ Basis: Dominance of Indicator Species

Soil

Series and phase: _____ On hydric soils list? Yes ____ No ____

Mottled: Yes ✓ No ____ Mottle color: 10YR 6/8 Matrix color: 10YR 7/1

Gleyed: Yes ____ No ✓ Other indicators high organic matter content throughout fibric surface layer

Hydric soils: Yes ✓ No ____ Basis: mottling matrix color, organic content

Hydrology

Inundated: Yes ____ No ____ Depth of standing water: _____

Saturated soils: Yes ____ No ____ Depth to saturated soil: _____

Other indicators: _____

Wetland hydrology: Yes ____ No ____ Basis: _____

Atypical situation: Yes ____ No ____

Normal Circumstances?: Yes ____ No ____

Wetland Determination: Wetland _____ Nonwetland _____

Comments: _____

Determined by : _____

APPENDIX A

COE DATA FORM 1
WETLAND DETERMINATION

Applicant Name: Chevron Application Number: _____ Project Name: Table Top

State: UT County: _____ Legal Description: Township _____ Range _____

Date: 7/14/92 Plot No.: Site 3 Section _____

Site 5x15m in size; PI 109 10m downslope of proposed road

Vegetation [list the three dominant species in each vegetation layer (5 if only 1 or 2 layers).

Species	Cover %	Indicator Status	Species	Cover %	Indicator Status
Trees			Herbs		
1.			1. Veratrum californicum	10	FACW
2.			2. Delphinium ramosum	15	
3.			3. Habenaria hyperborea	5	FACW
			4. Juncus arcticus	5	OBL
Saplings/shrubs			~~Woody vines~~		
1.			1. Aconitum columbianum	5	FACW
2.			2. Mertensia fusiformis	15	OBL
3.			3. Juncus _____	? 5	OBL

% of species that are OBL, FACW, and/or FAC: 6/7 Other indicators: _____

Hydrophytic vegetation: Yes X No _____ Basis: FACW, OBL PLANT SPECIES

Soil

Series and phase: _____ On hydric soils list? Yes ____ No ____

Mottled: Yes ____ No ✓ Mottle color: _____ Matrix color: 10 YR 3/1

Gleyed: Yes ____ No ✓ Other indicators fibric surface layer ... throughout ... soil wet

Hydric soils: Yes ✓ No ____ Basis: matrix color, organic matter

Hydrology

Inundated: Yes ✓ No ____ Depth of standing water: To ... (cm)

Saturated soils: Yes ✓ No ____ Depth to saturated soil: ...

Other indicators: Springs, Seeps

Wetland hydrology: Yes ✓ No ____ Basis: _____

Atypical situation: Yes ____ No ✓

Normal Circumstances?: Yes ✓ No ____

Wetland Determination: Wetland X Nonwetland _____

Comments: _____

Determined by : Hall, USFS

APPENDIX A

COE DATA FORM 1
WETLAND DETERMINATION

Applicant Name: Chevron Application Number: _____ Project Name: Tab G Top

State: UT County: _____ Legal Description: Township _____ Range _____

Date: 7/14/92 Plot No.: Site 4 Section _____

~30' × 150 m. -

Vegetation [list the three dominant species in each vegetation layer (5 if only 1 or 2 layers].

Species	Cover %	Indicator Status
~~Trees~~		
1. Carex microptera	7	OBL
2. Elymus glauca	3	FACU
3.		
Saplings/shrubs		
1.		
2.		
3.		

Species	Cover %	Indicator Status
Herbs		
1. Veratrum cali	35	OBL
2. Senecio triang.	20	OBL
3. Calamagrostis canad.	5	OBL
~~Woody vines~~		
1. Perideridia gairdn.	7	—
2. Aconitum colum.	2	FACW
3.		

% of species that are OBL, FACW, and/or FAC: 5/7 = 71% Other indicators: _____

Hydrophytic vegetation: Yes ✓ No _____ Basis: Indicator dominance

Soil

Series and phase: _____ On hydric soils list? Yes ____ No ____

Mottled: Yes ✓ No ____ Mottle color: 5YR 5/2 Matrix color: 10YR 2/1

Gleyed: Yes ____ No ✓ Other indicators High organic content throughout, wetness

Hydric soils: Yes ✓ No ____ Basis: mottling, matrix color, organic content

Hydrology

Inundated: Yes ____ No ____ Depth of standing water: _____

Saturated soils: Yes ____ No ____ Depth to saturated soil: _____

Other indicators: _____

Wetland hydrology: Yes ____ No ____ Basis: _____

Atypical situation: Yes ____ No ____

Normal Circumstances?: Yes ____ No ____

Wetland Determination: Wetland _____ Nonwetland _____

Comments: _____

Determined by : _____

APPENDIX A

COE DATA FORM 1
WETLAND DETERMINATION

Applicant Name: Chevron | Application Number: | Project Name: Table Top

State: UT County: | Legal Description: Township | Range

Date: 7/14/92 Plot No.: Site 5 | Section

BELOW STAKE PI 101 - Small Seep Photo 24

Vegetation [list the three dominant species in each vegetation layer (5 if only 1 or 2 layers]. 5x5m

Species	Cover %	Indicator Status	Species	Cover %	Indicator Status
Trees			Herbs		
1.			1. Senecio triangularis	15	OBL
2.			2. Ergeron peregrinus	5	FACW
3.			3. Delphinium	5	—
Saplings/shrubs			~~Woody vines~~		
1.			1. Geranium richardsonii	20	FACU
2.			2. Mertensia ciliata	10	OBL
3.			3. Carex microptera	2	OBL

% of species that are OBL, FACW, and/or FAC: 80 Other indicators:

Hydrophytic vegetation: Yes ✓ No Basis: Cover %

Soil

Series and phase: On hydric soils list? Yes No

Mottled: Yes ✓ No Mottle color: 7.5YR 4/6 Matrix color: 10YR 3/2

Gleyed: Yes No ✓ Other indicators

Hydric soils: Yes ✓ No Basis: mottling, matrix color

Hydrology

Inundated: Yes No Depth of standing water: X - (a Seep)

Saturated soils: Yes No Depth to saturated soil: 11"

Other indicators:

Wetland hydrology: Yes ✓ No Basis:

Atypical situation: Yes No

Normal Circumstances?: Yes ✓ No

Wetland Determination: Wetland X Nonwetland

Comments:

Determined by :

APPENDIX A

COE DATA FORM 1
WETLAND DETERMINATION

Applicant Name: Chevron Application Number: _____ Project Name: Table Top

State: UT County: _____ Legal Description: Township _____ Range _____

Date: 7/14/92 Plot No.: Site 6 Section _____

@ PI 80 Photo 25

Vegetation (list the three dominant species in each vegetation layer (5 if only 1 or 2 layers).

Species	Cover %	Indicator Status
Trees		
1.		
2.		
3.		
Saplings/shrubs		
1. Salix planifolia	25	—
2.		
3.		
Herbs		
1. Veratrum calif	25	FACW
2. Carex aquatilis	30	OBL
3. Senecio triang.	5	OBL
Aconitum columb.	2	FACW
Woody vines		
1. Juncus arcticus	5	"
2. Hab. hyperb.	+	—
3.		

% of species that are OBL, FACW, and/or FAC: 90 Other indicators: —

Hydrophytic vegetation: Yes ✓ No ____ Basis: Percent cover

Soil

Series and phase: _____ On hydric soils list? Yes ____ No ____

Mottled: Yes ✓ No ____ Mottle color: 7.5 YR 5/8 Matrix color: 7.5 YR 3/2

Gleyed: Yes ____ No ✓ Other indicators shallow groundwater coarse recognizable organics throughout saturated at 4"; standing water at 8"

Hydric soils: Yes ✓ No ____ Basis: mottling, color, hydrology

Hydrology

Inundated: Yes ✓ No ____ Depth of standing water: 8"

Saturated soils: Yes ✓ No ____ Depth to saturated soil: 4"

Other indicators: _____

Wetland hydrology: Yes ✓ No ____ Basis: saturation & depth to standing water

Atypical situation: Yes ____ No ✓

Normal Circumstances?: Yes ✓ No ____

Wetland Determination: Wetland ✓ Nonwetland _____

Comments: _____

Determined by: RJ DCA

APPENDIX A

COE DATA FORM 1
WETLAND DETERMINATION

Applicant Name: Chevron | Application Number: _____ | Project Name: Table Top

State: UT | County: _____ | Legal Description: Township _____ Range _____

Date: 7/14/92 | Plot No.: Site 7 | Section _____

Vegetation [list the three dominant species in each vegetation layer (5 if only 1 or 2 layers].

Species	Cover %	Indicator Status	Species	Cover %	Indicator Status
Trees			Herbs		
1.			1. Carex aquat	60	OBL
2.			2. Allium gaspi	+	FACU (spelling?)
3.			3. Calamagrost canna	7	OBL
Saplings/shrubs			~~Woody vines~~		
1. Salix spp	3	FACW	1. Veratrum calif.	5	FACW
2.			2. Epilobium hors	+	FACW+
3.			3.		

% of species that are OBL, FACW, and/or FAC: 100 Other indicators: _____

Hydrophytic vegetation: Yes ✓ No _____ Basis: _____

Soil

Series and phase: _____ On hydric soils list? Yes _____ No _____

Mottled: Yes _____ No ✓ Mottle color: _____ Matrix color: 5YR 2.5/

Gleyed: Yes _____ No ✓ Other indicators saturated to surface, high organic content

Hydric soils: Yes ✓ No _____ Basis: color, hydrology, organic content

Hydrology

Inundated: Yes ✓ No _____ Depth of standing water: surface in most areas

Saturated soils: Yes ✓ No _____ Depth to saturated soil: surface

Other indicators: _____

Wetland hydrology: Yes ✓ No _____ Basis: flooded, saturated

Atypical situation: Yes _____ No ✓

Normal Circumstances?: Yes ✓ No _____

Wetland Determination: Wetland _____ Nonwetland _____

Comments: _____

Determined by : _____

APPENDIX A

COE DATA FORM 1
WETLAND DETERMINATION

Applicant Name: Chevron Application Number: _____ Project Name: Table Top

State: UT County: _____ Legal Description: Township _____ Range _____

Date: 7/15/92 Plot No.: Site 8 Section _____

Large Wetland ~50m south of Proposed Road to Sec. 16 (only 150m)

Vegetation [list the three dominant species in each vegetation layer (5 if only 1 or 2 layers]. Near where P. road makes switchback to N.

Species	Cover %	Indicator Status	Species	Cover %	Indicator Status
Trees			Senecio triana	3	OBL
1.			**Herbs**		
2.			1 Carex aquatilis	70	OBL
3.			2. Veratrum calif.	1	FACW
			3. Salix spp	5	—
Saplings/shrubs			~~Woody vines~~		
1.			1. Mertensia ciliata	1	OBL
2.			2.		
3.			3.		

% of species that are OBL, FACW, and/or FAC: 100 Other indicators: _____

Hydrophytic vegetation: Yes ✓ No _____ Basis: Coverage ✓

Soil

Series and phase: _____ On hydric soils list? Yes _____ No _____

Mottled: Yes _____ No ✓ Mottle color: _____ Matrix color: 10 YR 3/1

Gleyed: Yes _____ No ✓ Other indicators high organic content, saturated to surface

Hydric soils: Yes ✓ No _____ Basis: color, organics, hydrology

Hydrology

Inundated: Yes ✓ No _____ Depth of standing water: 6"

Saturated soils: Yes ✓ No _____ Depth to saturated soil: surface

Other indicators: _____

Wetland hydrology: Yes ✓ No _____ Basis: saturated soils

Atypical situation: Yes _____ No ✓

Normal Circumstances?: Yes ✓ No _____

Wetland Determination: Wetland ✓ Nonwetland _____

Comments: _____

Determined by: [illegible]

APPENDIX A

COE DATA FORM 1
WETLAND DETERMINATION

Applicant Name: Chevron Application Number: _____ Project Name: Table Top

State: UT County: _____ Legal Description: Township _____ Range _____

Date: 7/6-/92 Plot No.: site 9 Section Section 16

Wetland, immediately east of drill pad, probably 2 25 x 80 m in size - 30-50 m from edge of P. pad

Vegetation [list the three dominant species in each vegetation layer (5 if only 1 or 2 layers].

Species	Cover %	Indicator Status	Species	Cover %	Indicator Status
Trees			Herbs		
1.			1. Carex aquat.	75	OBL
2.			2. Veratrum calif.	5	OBL
3.			3. Senecio triang	5	OBL
Saplings/shrubs			~~Woody vines~~		
1.			1. Galium trifidum	5	OBL
2.			2.		
3.			3.		

% of species that are OBL, FACW, and/or FAC: 100 Other indicators: _____

Hydrophytic vegetation: Yes X No _____ Basis: _____

Soil

Series and phase: _____ On hydric soils list? Yes _____ No _____

Mottled: Yes _____ No ✓ Mottle color: _____ Matrix color: 10 YR 2/1

Gleyed: Yes _____ No ✓ Other indicators saturated soil - standing water

Hydric soils: Yes ✓ No _____ Basis: color, hydrology

Hydrology

Inundated: Yes ✓ No _____ Depth of standing water: surface

Saturated soils: Yes ✓ No _____ Depth to saturated soil: surface

Other indicators: _____

Wetland hydrology: Yes _____ No _____ Basis: flooded, saturated

Atypical situation: Yes _____ No ✓

Normal Circumstances?: Yes ✓ No _____

Wetland Determination: Wetland X Nonwetland _____

Comments: _____

Determined by : _____

APPENDIX A

COE DATA FORM 1
WETLAND DETERMINATION

Applicant Name: Chevron Application Number: _____ Project Name: Table Top

State: UT County: _____ Legal Description: Township _____ Range _____

Date: 7/15/92 Plot No.: Site 10 Section _____

Vegetation [list the three dominant species in each vegetation layer (5 if only 1 or 2 layers].

Species	Cover %	Indicator Status	Species	Cover %	Indicator Status
Trees			Herbs		
1.			1. Open pond w/ some (10%)		
2.			2.		
3.			3. horned pondweed		
Saplings/shrubs			Woody vines		
1.			1.		
2.			2.		
3.			3.		

% of species that are OBL, FACW, and/or FAC: 100 Other indicators: _____

Hydrophytic vegetation: Yes ✓ No _____ Basis: _____

Soil

Series and phase: _____ On hydric soils list? Yes ____ No ____

Mottled: Yes ____ No ✓ Mottle color: _____ Matrix color: 10YR 2/1

Gleyed: Yes ____ No ✓ Other indicators saturated soil - standing water

Hydric soils: Yes ✓ No ____ Basis: color, hydrology

Hydrology

Inundated: Yes ✓ No ____ Depth of standing water: surface

Saturated soils: Yes ✓ No ____ Depth to saturated soil: surface

Other indicators: _____

Wetland hydrology: Yes ✓ No ____ Basis: flooded, saturated

Atypical situation: Yes ____ No ✓

Normal Circumstances?: Yes ✓ No ____

Wetland Determination: Wetland _____ Nonwetland _____

Comments: _____

Determined by : _____

APPENDIX A

COE DATA FORM 1
WETLAND DETERMINATION

Applicant Name: Chevron Application Number: _____ Project Name: Table Top

State: UT County: _____ Legal Description: Township _____ Range _____

Date: 7/15/92 Plot No.: Site 11 Section _____

Vegetation [list the three dominant species in each vegetation layer (5 if only 1 or 2 layers].

Species	Cover %	Indicator Status
Trees		
1. Abies lasiocarpa +		FACU
2.		
3.		
Saplings/shrubs		
1.		
2.		
3.		
Herbs		
1. Carex aquat.	60	OBL
2. Senecio triang	2	OBL
3. Vaccin. myrtillus	12	— NI
~~Woody vines~~		
1. Salix spp.	10	FACW
2.		
3.		

% of species that are OBL, FACW, and/or FAC: 4/5 = 80% Other indicators: _____

Hydrophytic vegetation: Yes ✓ No _____ Basis: _____

Soil

Series and phase: _____ On hydric soils list? Yes ____ No ____

Mottled: Yes ____ No ✓ Mottle color: _____ Matrix color: 10 YR 3/1

Gleyed: Yes ____ No ✓ Other indicators saturated soil - surface water

Hydric soils: Yes ✓ No ____ Basis: color, hydrology

Hydrology

Inundated: Yes ✓ No ____ Depth of standing water: surface

Saturated soils: Yes ✓ No ____ Depth to saturated soil: surface

Other indicators: _____

Wetland hydrology: Yes ✓ No ____ Basis: flooded, saturated soils

Atypical situation: Yes ____ No ✓

Normal Circumstances?: Yes ✓ No ____

Wetland Determination: Wetland _____ Nonwetland _____

Comments: _____

Determined by : _____

APPENDIX A

COE DATA FORM 1
WETLAND DETERMINATION

Applicant Name: Chevron Application Number: _____ Project Name: Table Top

State: UT County: _____ Legal Description: Township _____ Range _____

Date: 7/15/92 Plot No.: Site 12 in Sect. 21 Section 21

Drill Pad Area - Mod open meadows

Vegetation [list the three dominant species in each vegetation layer (5 if only 1 or 2 layers].

Species	Cover %	Indicator Status	Species	Cover %	Indicator Status
Trees			Herbs		
1.			1. Veratrum calif	10	FACW
2.			2. Senecio triang.	10	OBL
3.			3. Carex microp.	20	OBL
Saplings/shrubs			~~Woody vines~~		
1. Salix spp. (low)	15	FACW	1. Ranunculus cymb.	1	OBL
2.			2. Carex spp.	35	OBL
3.			3. Potentilla frut.	~15	FACW

% of species that are OBL, FACW, and/or FAC: 100 Other indicators: _____

Hydrophytic vegetation: Yes ✓ No _____ Basis: _____

Soil

Series and phase: _____ On hydric soils list? Yes ____ No ____

Mottled: Yes ✓ No ____ Mottle color: 5YR 5/8 Matrix color: 10YR 2/1

Gleyed: Yes ____ No ✓ Other indicators High organic content throughout, wetness

Hydric soils: Yes ✓ No ____ Basis: mottling, matrix color, organic content

Hydrology

Inundated: Yes ✓ No ____ Depth of standing water: 0 - 1/2"

Saturated soils: Yes ✓ No ____ Depth to saturated soil: 0 - 6"

Other indicators: diffuse drainage throughout area - some

Wetland hydrology: Yes ✓ No ____ Basis: _____

Atypical situation: Yes ____ No ✓ wet meadows interfinger among forest stands

Normal Circumstances?: Yes ✓ No ____

Wetland Determination: Wetland ✓ Nonwetland _____

Comments: _____

Determined by: [illegible], DCM

APPENDIX K – WATER MONITORING PROGRAM

APPENDIX K - WATER MONITORING PROGRAM

TASK ONE: ESTABLISHMENT OF CROSS-SECTIONS

With the assistance of the U.S. Forest Service on October 21, 1992, two permanent stream cross-sections were established on the Main Fork Creek - one upstream and one downstream from the proposed drill site location in the SW 1/4 of Section 16-T1N-R10E, S.L.M., Summit County, Utah. The Main Fork is a tributary of Stillwater Fork which drains into the Bear River.

A survey of the cross-sections was completed to establish an area versus depth relationship. A fixed reference for future stage measurements was installed. Staff gauges were installed at each site.

TASK TWO: PERFORMANCE OF GRAB SAMPLING AT EACH OF THE TWO SITES ON THE MAIN FORK.

1. Develop a rating curve

For each of the two sites a rating curve - flowrate versus depth - will be developed.

2. Prior to Earthwork

Sampling and analysis have been or will be performed prior to start of earthwork as described below.

* * * * * * * * * * * * * * *

- Sampling at each of the two sites was performed on October 21, 1992. The following were collected from both sites:
  - flow rate
  - stage elevation
  - water samples

- The water samples collected at both sites on October 21, 1992 were tested for the following:
  - total phenols
  - suspended solids (TSS, 160.2 method)
  - RCRA metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver)

- Field measurements of the water at both sites were made on October 21, 1992 as to the following:
  - temperature
  - dissolved oxygen

* * * * * * * * * * * * * * *

- Sampling at the downstream site was performed on June 4, 1993. The following were collected from this site:

- flowrate
- stage elevation
- water samples
- sediment samples

- The water samples collected from the downstream site on June 4, 1993 were tested for the following:
  - suspended solids (TSS, 160.2 method)
  - RCRA metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver)
  - oil and grease

- Field measurements of the water at the downstream site were made on June 4, 1993 as to the following:
  - turbidity

- The sediment samples collected from the downstream site on June 4, 1993 were tested for the following:
  - RCRA metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver)
  - oil and grease

* * * * * * * * * * * * * *

- Sampling at the downstream site was performed on July 8, 1993. The following were collected from this site:
  - water samples
  - sediment samples

- All samples collected from the downstream site on July 8, 1993 were tested for the following:
  - oil and grease

* * * * * * * * * * * * * *

- Sampling at each of the two sites was performed on September 8, 1993. The following were collected from both sites:
  - flowrate
  - stage elevation
  - water samples
  - sediment samples

- The water samples collected from both sites on September 8, 1993 were tested for the following:
  - suspended solids (TSS, 160.2 method)
  - RCRA metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver)
  - oil and grease
  - BTEX
  - total volatile hydrocarbons
  - fuel identification by GC/FID

- Field measurements of the water at both sites were made on September 8, 1993 as to the following:
  - dissolved oxygen
  - turbidity

- The sediment samples collected from both sites on September 8, 1993 were tested for the following:
  - oil and grease
  - fuel identification by GC/FID

* * * * * * * * * * * * * *

- Sampling at each of the two sites will be performed on a date prior to the start of earthwork which is likely to occur in the summer of 1994. The following will be collected:
  - flowrate
  - stage elevation
  - water samples
  - sediment samples

- The water samples from both sites will be tested for the following:
  - pH
  - conductivity
  - total volatile hydrocarbons
  - oil and grease
  - suspended solids (TSS, 160.2 method)

- Field measurements of the water at both sites will be made as to the following:
  - temperature
  - dissolved oxygen
  - turbidity

- The sediment samples from both sites will be tested for the following:
  - oil and grease

3. During Earthwork

Sampling and analysis will be performed at each of the two sites on a weekly basis during earthwork (earthwork is estimated to be of a 4 to 6 week duration). One of these samples will be collected immediately following the end of the earthwork.

- The following will be collected on each sampling occasion:
  - stage elevation
  - water samples

- All water samples will be tested for the following:
  - pH
  - conductivity
  - total volatile hydrocarbons
  - oil and grease
  - suspended solids (TSS, 160.2 method)

- Also the water samples collected immediately following the end of earthwork will be tested for RCRA metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver).

- Field measurements of the water at both sites will be made on each occasion as to the following:
  - temperature
  - dissolved oxygen
  - turbidity

4. Post Construction

Sampling and analysis will be performed at each of the two sites on two occasions – once during the spring runoff following the end of earthwork and once during the summer following the end of earthwork.

- The following will be collected from both sites:
  - stage elevation
  - water samples

- All water samples will be tested for the following:
  - pH
  - conductivity
  - total volatile hydrocarbons
  - oil and grease
  - suspended solids (TSS, 160.2 method)

- Field measurements of the water at both sites will be made as to the following:
  - temperature
  - dissolved oxygen
  - turbidity

TASK THREE: SAMPLING OF SPRINGS AT CHRISTMAS MEADOWS

Samples have been or will be collected and analyzed from the three springs selected by the U.S. Forest Service on October 21, 1992 as described below.

* * * * * * * * * * * * * * *

- Sampling at each of the springs was performed on October 21, 1992. The water samples collected from these springs were tested for the following:
  - total phenols
  - suspended solids (TSS, 160.2 method)
  - RCRA metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver)

- Field measurements of the water at both sites were made on October 21, 1992 as to the following:
  - temperature
  - dissolved oxygen

* * * * * * * * * * * * * *

- Sampling at each of the springs was performed on June 4, 1993. The water samples collected from the springs were tested for the following:
  - suspended solids (TSS, 160.2 method)
  - RCRA metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver)
  - oil and grease
  - total volatile hydrocarbons

- Field measurements of the water at each of the springs were made on June 4, 1993 as to the following:
  - turbidity

* * * * * * * * * * * * * *

- Sampling at each of the three springs was performed on July 8, 1993. The water samples collected from the springs were tested for the following:
  - oil and grease

* * * * * * * * * * * * * *

- Sampling at each of the three springs will also be performed once during earthwork, once shortly after earthwork has been completed, once during the spring following the end of earthwork and once during the summer following the end of earthwork. The water samples from the springs will be tested for:
  - pH
  - conductivity
  - total volatile hydrocarbons
  - oil and grease
  - suspended solids (TSS, 160.2 method)
  - RCRA metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver)

- In addition field measurements of the water at each of the three springs will be made as to the following:
  - temperature
  - dissolved oxygen
  - turbidity

TASK FOUR: REPORTING

1. Prepare a Pre-Construction Report

The report will include the following;

- discussion of siting of permanent cross-sections
- presentation of rating curves for each Main Fork site
- presentation of water and sediment quality data from the sampling of the two Main Fork sites
- presentation of water quality data from each of the three springs tested

2. Prepare a Construction Activities Report

The report would be completed immediately after the end of earthwork activities and is to discuss the results of tests conducted during earthwork activities. It should include the following:

- presentation of water quality data from the sampling of the two Main Fork sites.
- presentation of water quality data from each of the three springs tested.

3. Prepare a Post-Construction Follow-up Report

This report will include Main Fork and Christmas Meadows springs water quality data collected after the end of construction activities.

INDEX

INDEX

Affected Environment S-6, 3-1, 8-3, 8-8
Air Quality S-6, 3-21, 4-22, 4-23, 4-35, 7-7, 8-3, 9-6
Alternatives Considered S-4, S-5, 2-1, 2-11, 2-14, 2-19, 4-8, 8-5, J-2
Alternatives Identified S-4, 2-11
Analysis Process S-3, 1-4, 2-1
Apparent Naturalness 3-22, 3-24, 4-25, 4-26, 4-27, 4-31, 9-2
Application for Permit to Drill S-1, S-2, 1-1, 1-3, 8-1, 9-15, B-1
Authorizing Actions 1-3, 9-14, A-1, A-4

Climate 3-4, 3-5, 3-13, 4-4, 8-10
Comparison of Alternatives 2-21, 4-1
Comparison of Issues 2-23
County Revenues 3-37, 4-37
Crew Camp S-4, S-5, 2-11, 2-13, 3-45
Cultural Resources . . S-6, S-8, 2-18, 2-21, 2-22, 3-43, 3-44, 3-45, 3-47, 4-36, 4-43, 4-44, 4-45, 4-46, 6-1, 6-2, 7-9, 8-4, 8-5, 9-18, 9-19, 9-20, A-4

Decisions to be Made S-2, 1-3, 9-3
Demographics 3-33, 4-16
Developed Recreation Sites 3-42, 4-30, 8-12
Drilling and Completion 2-8, 4-8, 9-5, 9-15, A-6, D-1
Drilling Fluids 2-7, 2-9, 2-15, 4-6, 4-7
Drilling Practices 2-1, 2-9

Economic Activities 3-36
Economic Effects 4-36
Environmental Consequences S-6, 4-1, 4-25

Fire 3-13, 3-17, 3-30, 3-34, 4-33, 5-1, 6-1, 7-4, 7-7, 9-9, D-3
Fiscal Effects 4-37
Fisheries S-3, S-6, 2-2, 3-11, 3-20, 3-21, 4-20, 4-21, 4-35, 6-1, 6-2, 9-12
Forest Plan . S-2, S-8, 1-3, 1-4, 2-13, 2-18, 2-19, 2-21, 2-22, 2-23, 2-24, 2-25, 3-14, 3-15, 3-23, 3-25, 3-26, 3-28, 3-29, 4-1, 4-2, 4-3, 4-7, 4-9, 4-11, 4-12, 4-13, 4-14, 4-15, 4-20, 4-22, 4-25, 4-29, 4-30, 4-31, 4-32, 4-33, 4-34, 4-35, 4-36, 4-39, 4-40, 4-41, 4-42, 4-43, 4-47, 4-48, 7-4, 7-5, 8-1, 9-4, 9-7, 9-9, 9-12, 9-13, 9-14, 9-16, 9-17, 9-18, 9-19, H-4

Geologic Hazards 3-1, 4-2
Geology S-6, 2-11, 3-1, 3-32, 4-2, 4-22, 6-1, 6-2, 7-1, 7-2, 8-4, 8-12
Gravel Source . S-1, S-5, S-6, S-7, S-8, 1-1, 2-7, 2-13, 2-14, 2-19, 2-21, 2-22, 3-45, 4-3, 4-5, 4-7, 4-11, 4-13, 4-14, 4-17, 4-18, 4-40, 4-43, 9-8, A-4, E-1, E-2
Ground Water S-6, 2-7, 3-8, 3-9, 3-11, 4-6, 4-7, 4-9, 4-11, 6-2, 7-2, 9-15, A-3

Irretrievable S-8, 4-1, 4-25, 4-47, 4-48
Issues S-3, S-4, 2-1, 2-2, 2-22, 2-23, 3-1, 3-13, 3-27, 3-30, 8-10, 9-10, 9-39, D-1
Land Use . S-1, S-8, 1-3, 3-27, 3-45, 4-30, 4-48, 7-7, 8-5, 8-6, 8-13, 9-2, 9-5, 9-39, 10-2, A-3, H-2

Landscape Character 3-40, H-1, H-2
Livestock 2-23, 4-30, 4-31, 8-9, D-3

Manageability/boundaries 3-22, 3-25, 4-25, 4-26, 4-27
Management Indicator Species 3-19, 8-1, 8-7
Mineral Resources S-2, 3-1, 3-3, 4-2

National Environmental Policy Act S-2, 1-3, 3-26, 3-44, 8-1
National Forest Management Act 3-1, A-1, A-4
Natural Integrity 3-22, 3-24, 4-3, 4-25, 4-26, 4-27, 4-31, 4-37, 9-2
NEPA . . S-2, 1-3, 1-4, 2-19, 3-1, 3-11, 3-13, 3-17, 3-40, 4-35, 5-1, 6-1, 8-1, 8-5, 8-8, 9-3, 9-5, 9-6, 9-8, 9-10, 9-14, 9-15, 9-18, A-3
NFMA A-1

Old Growth 2-21, 3-14, 3-15, 3-20, 4-10, 4-11, 4-12, 9-17

Permitting Process 1-4, 9-15
Proposed Action . S-1, S-2, S-5, S-8, 1-1, 1-3, 1-4, 2-1, 2-3, 2-12, 2-13, 2-14, 2-16, 2-20, 2-22, 3-30, 3-42, 3-46, 3-47, 4-1, 4-2, 4-6, 4-16, 4-19, 4-20, 4-25, 4-30, 4-36, 8-5, 8-10, 8-11, 9-4, 9-5, 9-12, A-1, A-2, A-3, D-2
Purpose and Need S-1, 1-1, 9-8, 9-9

Reclamation . . S-1, S-8, 1-1, 2-3, 2-4, 2-5, 2-6, 2-9, 2-15, 2-18, 2-20, 2-22, 3-4, 3-5, 3-7, 3-8, 4-1, 4-3, 4-4, 4-5, 4-8, 4-10, 4-11, 4-14, 4-15, 4-17, 6-2, 7-4, 8-3, 8-9, 8-12, 9-8, 9-14, 9-15, A-1, A-5, D-1, D-3, D-4, E-1, E-2, E-3, J-4, J-5
Recreation . S-2, S-3, S-6, 1-4, 2-1, 2-2, 2-3, 2-13, 2-18, 2-23, 3-4, 3-7, 3-9, 3-11, 3-21, 3-22, 3-25, 3-26, 3-27, 3-28, 3-31, 3-33, 3-37, 3-39, 3-40, 3-41, 3-42, 4-2, 4-9, 4-20, 4-21, 4-25, 4-30, 4-31, 4-32, 4-37, 4-38, 4-41, 4-47, 5-1, 6-1, 6-2, 7-7, 8-1, 8-5, 8-9, 8-10, 8-12, 8-13, 9-2, 9-13, 9-17, 9-18, H-1, H-4
Recreation Trails 3-41, 3-42
Relation to Forest Plan S-2, 1-4
Remoteness 3-22, 3-24, 4-25, 4-26, 4-27
Riparian Areas 2-12, 2-19, 3-17, 3-20, 3-29, 4-7, 8-10, 9-10, 9-16
Road Alternatives 2-12
Road Upgrade and Construction 2-7, 2-16, 4-8, 4-29
Roadless Areas S-6, 3-22, 3-23, 4-38, 9-18

Safety 2-7, 2-8, 2-9, 2-10, 2-11, 3-27, 4-30, 4-32, 9-6, A-1, A-2, A-3, A-6, D-1
Schedule 2-3, 2-4, 3-29, 4-1, 4-2, 4-36, 9-5
Scope of This Analysis S-2, S-4, 1-3, 2-2, 9-4, 9-8
Scoping S-3, S-4, 2-1, 2-2, 2-11, 3-22, 3-30, 3-32, 8-10, 9-1, 9-6, D-1
Seismicity 3-1, 3-3
Sensitive Species 3-17, 3-19, 4-11, 4-15, 9-11, 9-12, 9-13
Short-Term Use and Long-Term Productivity 4-47
Social Effects 4-36, 4-37
Socioeconomics S-6, 3-30, 4-36, 6-2, 7-8
Soils and Landforms 3-3, 4-3, 4-5, 4-9
Solitude . S-3, 2-1, 2-23, 3-22, 3-24, 3-25, 4-24, 4-25, 4-26, 4-27, 4-31, 4-32, 4-37, 4-42, 8-13
Special Features 3-22, 3-25, 4-25, 4-26, 4-27
Species of Special Concern 3-17, 3-20, 9-12
Surface Use Plan . . S-2, 1-3, 1-4, 2-19, 2-24, 4-5, 8-1, 8-3, 8-9, 8-12, 9-2, 9-7, 9-14, A-4, B-1

Surface Water . S–4, 2–2, 2–17, 3–10, 3–11, 3–13, 3–14, 4–6, 4–7, 4–8, 4–9, 4–11, 4–21, 6–2, 7–3, A–3, A–6, J–3

TES Plant Species 3–15, 4–11
Threatened and Endangered Species 2–23, 3–11, 3–17, 3–18, 3–21, 9–11, A–1, A–2, G–1
Threatened, Endangered, and Sensitive Plant Species 3–15
Transportation S–4, S–6, 2–3, 2–11, 2–24, 3–22, 3–27, 4–5, 4–19, 4–23, 4–30, 6–1, A–3, A–6

Utah Communities 3–31, 3–34

Vegetation Types 3–13, 3–14, 4–15, 4–38
Visual Characteristics S–4, 2–2, 2–12, 2–18, 2–24, 3–39, 4–38, 4–39, 7–7
Visual Quality Objectives 2–19, 2–24, 3–39, 3–42, 3–43, 4–39, 4–40, 4–41, 8–13, H–1
Visual Sensitivity 3–41, H–1, H–5

Water Resources 3–8, 3–10, 3–11, 4–6, 5–1, 7–2, 7–3, 8–10
Water–Right 3–9
Wetlands . . . S–6, 2–12, 2–17, 3–11, 3–12, 3–13, 3–29, 4–3, 4–6, 4–7, 4–8, 4–10, 4–11, 7–4, 8–13, 9–10, 9–15, 9–17, A–2, A–3, A–5, D–3, H–3, J–1, J–2, J–3, J–4, J–5, J–6
Wilderness S–2, 1–4, 2–12, 2–18, 2–23, 3–3, 3–21, 3–22, 3–23, 3–24, 3–25, 3–26, 3–27, 3–28, 3–33, 3–41, 4–24, 4–25, 4–26, 4–27, 4–28, 4–31, 4–32, 4–35, 4–38, 4–46, 8–12, 8–13, 9–3, 9–4, 9–17, 9–18, 9–40, 10–1, A–2, H–1
Workforce 2–3
Wyoming Communities 3–31, 3–34

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RECORD OF DECISION
TABLE TOP EXPLORATORY OIL AND GAS WELL
CHEVRON, USA

U.S.D.A. FOREST SERVICE, REGION 4
WASATCH-CACHE NATIONAL FOREST
EVANSTON RANGER DISTRICT

SUMMIT COUNTY, UTAH

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INTRODUCTION

This document contains my decisions regarding Chevron, USA's proposal to construct and drill an exploratory oil/gas well in the Main Fork drainage on the Evanston Ranger District.

Specifically, I needed to determine by this decision:

1. Whether or not to approve the Surface Use Plan of Operations submitted with the Application for Permit to Drill (APD).
2. How to access the well site.
3. Whether or not to authorize the Bureau of Land Management (BLM) to grant an exception to the No Surface Occupancy lease stipulation in relation to the proposed road location.
4. Whether or not to authorize the use of existing Forest System roads.
5. Future management of the road to the well site (if access is by road.)

These site-specific decisions implement the goals and objectives from the Wasatch-Cache National Forest Land and Resource Management Plan (Forest Plan), approved on September 4, 1985 by J.S. Tixier, Regional Forester for the Intermountain Region, U.S.D.A. Forest Service. The Forest Plan guides all natural resource management activities for the Wasatch-Cache National Forest. The Chevron Table Top Prospect Exploratory Oil Well Environmental Impact Statement (EIS) is the site specific analysis document that evaluates management practices proposed to achieve the goals and objectives of the Forest Plan within the Main Fork drainage. (Please refer to map.)

Subsequent to making the above listed decisions within the authority of the Forest Service, the BLM, having been a cooperating agency in the preparation of the EIS, will formally adopt that analysis and make the following decisions:

1. Whether or not to approve the "Drilling Plan" and the APD as a whole, which incorporates the Forest Service decision relative to the Surface Use Plan of Operations.

2. Whether or not to grant an exception to the No Surface Occupancy lease stipulation relative to the proposed road location.

DECISION

After careful review of the Final EIS and public comments, I believe I have reached decisions that are sound and give balance to resource management in the area. My rationale for the decisions I have made is

presented below. Throughout this decision making process, I used the analysis that was available through the EIS, the feedback I received from the public in the way of comments on the EIS, and my experience and knowledge of the laws, regulations, and expectations facing the Forest Service and, in particular, the Wasatch-Cache National Forest.

My decision is to implement the Proposed Action as it was described in the EIS. In the EIS, the Proposed Action was described as the Forest Service's Preferred Alternative:

> drilling, completing, and testing, and possible production at, a single exploratory oil well on 3.43 acres in T1N., R10E., SW1/4, SW1/4, Section 16 (Alternative Well Site A).
>
> restoring 0.8 mile of Stillwater Road (Forest Road No. 057), improving 2.1 miles of Peninsula Road (Forest Road No. 306), constructing 2.0 miles of road on the west side of the Main Fork stream, constructing a bridge across the Main Fork and constructing 0.8 mile of new road to the proposed well site, and reclaiming 2.4 miles of old 4wd trail in the Main Fork drainage (Forest Road No. 097).
>
> constructing a .5 acre gravel source pit in T1N., R10E., NE1/4, NE1/4, Sec. 8 (Alternative Gravel Site C) to provide gravel to surface the existing and new road and well pad.
>
> graveling 5.7 miles of the road into the well site and the 3.43 acre well pad
>
> drilling a temporary water well on the well pad to provide water for drilling and dust control, or if the well does not provide a sufficient amount of water, installing a temporary water pipeline to the location and/or hauling water from another source (if needed).
>
> reclaiming all surface disturbance at the well site if the well is not successful.
>
> constructing a 4,000 square foot parking area/trailhead near the Main Fork bridge.

The following section describes each part of my decision with specific rationale. More general rationale for these decisions are presented later in this document. Hopefully this will enable the reader to get a feel for the broader picture.

<u>We will approve the Surface Use Plan of Operations submitted as part of the Application for Permit to Drill (APD) for Alternative Well Site A</u>

Alternative Well Site A has approximately two less miles of road construction than Alternative Site B, within country having unroaded characteristics. Either site is suitable for drilling the exploratory well as far as subsurface geology is concerned. It is quite clear to me that Site A will impact the least amount of ground and other resources as compared to Site B.

Several access routes into the area were looked at but eliminated from detailed study early in the process. The Hayden Fork Road Alternative was eliminated because of the obvious need for extensive fill required to cross wetland and riparian habitat directly adjacent to the Mirror Lake Highway. Once this is done, access is gained only to a point where the existing road through the Peninsula area already exists.

The Amoco Road Alternative was also eliminated early in the process. At one point, this route reaches to within .5 mile of the Christmas Meadows summer home area and has to traverse an area of bogs and large boulders.

Once the mouth of the Main Fork drainage is reached, all the access routes are confined to one side or the other of the Main Fork stream in the bottom of the drainage. The greatest difference between the access alternatives dealt mostly with gaining access to the mouth of the drainage. Since the existing Peninsula

Road already reaches within .25 mile of the mouth of the drainage, it would involve the least amount of new disturbance.

Alternative well sites located in developed areas were also considered but eliminated from detailed study. Moving the well site away from the target geologic structure would require directional drilling in order to reach the objective. The increased cost of directional drilling along with the extreme risk of being able to technically complete the hole, eliminated this alternative from detailed study.

Another method of access strongly suggested by several interested publics was helicopter access. This alternative was considered but eliminated from detailed study early in the EIS. Several factors caused this. (1) Helicopter activity would be continuous for an estimated 27 weeks during pad construction and drilling operations. There would be another 2 weeks of helicopter activity associated with reclamation if the well is not productive. The flight path would lie between four developed campgrounds and a summer home area. (2) an additional staging area, approximately the size of the drill pad, would have to be constructed for loading and off loading equipment and for a landing/refueling area for the large helicopter(s) at the end of the Peninsula Road. (3) The drilling equipment capable of doing the job is located outside North America and the cost of transporting this equipment to this project area would be extremely high in addition to the expense of using a helicopter to support the drilling operations which can be 10 times greater. The cost for helicopter supported drilling was also greater than the cost to reclaim the newly constructed or relocated roads in the Main Fork drainage which would also leave the drainage in an unroaded condition. I very seriously considered this helicopter access option because it would have eliminated the need for an access road. But the disadvantages listed above for economics and resource concerns outweighed, in my judgement, the advantage especially since the disturbance from helicopter activity would be spread out across a larger area including the Christmas Meadows summer home area and potentially the Wilderness.

The alternative gravel source sites are all located along the Peninsula Road. Samples from the different sites indicate that Alternative Gravel Source C has more of the clay needed to bind the coarser gravels together. Maintenance costs and road repairs would be less in the long run.

All mitigation measures and conditions developed to address impacts of implementing the proposed action identified in Chapters 2 and 4 of the EIS, the Biological Assessment/Evaluation, and the following appendices will be carried forward as conditions of approval for the Surface Use Plan of Operation.

Appendix A - Authorizing Actions
Appendix B - Application for Permit to Drill and Surface Use Plan
Appendix C - Road Construction Criteria
Appendix D - Summary of Mitigation and Monitoring
Appendix E - Erosion Control and Reclamation

Best Management Practices (BMPs) (Soil and Water Conservation Handbook) guided development of these measures, criteria, and conditions.

Construction activities on the lease or within the Unit will be delayed until July 1 to minimize effects on wildlife in the area and to ensure that the bridge across the Main Fork is installed during low water conditions. The determination as to when activities may commence will be based on visual monitoring of the water level and decline of spring runoff by District personnel.

A small trailhead will be constructed on the west side of the Main Fork near the new bridge to provide parking for those wishing to hike into the Hell Hole region of the High Uintas Wilderness. Use of the Hell Hole area could increase; however, this increase may mean that the use in other portions of the Wilderness may decrease. I realize that those who have used Hell Hole because of its seclusion will not appreciate the potential increase in use.

If the well is unsuccessful, the new road on the east side of the Main Fork will be fully reclaimed. All gravel surfacing will be removed for use elsewhere. The road will be shaped to as near preconstruction appearance as reasonable, and reseeded. The new bridge will be removed. In other words, if the well is unsuccessful, there will be no road access on the east side of the Main Fork.

Once the construction and drilling operations are finished, the public will be allowed to use all of the access road during the summer months, except for the new bridge across the Main Fork and the road between the bridge and the drill site. This will afford the public increased opportunities for dispersed camping in the vicinity of the Mirror Lake Highway, and to visit the Howe Flume Historic District as a result of the improved access road. The road behind the existing bridge on the Stillwater Fork will be closed to all public motorized travel from September 15 until such time in the following spring that road conditions and goshawk activity permit.

We will authorize the Bureau of Land Management (BLM) to grant an Exception to the No Surface Occupancy (NSO) stipulation

The road alignment up through the Main Fork drainage will cross two parcels of land where a NSO stipulation has been applied to the lease that covers those areas. The first location is in T.1N., R.10E., N 1/2 SE 1/4 of Section 17 and the second is T.1N., R.10E., NW1/4 of Section 21. These lands are not on the lease being developed and the NSO stipulation is only applicable due to those lands being within the Exploratory Unit.

The lease, U-54044, states the following resource management concerns for the NSO stipulation:

-erodible soils
-moderate visual resources
-high recreation value and/or
-Christmas Meadows Recreation Area withdrawal

These reasons for application of the NSO stipulation have been addressed in the Final EIS (FEIS). The NSO stipulation was applied generally to the lease as a whole. Where resource management concerns underlying or requiring use of a stipulation can be avoided and/or mitigated or if new technology has come to light which mitigates impacts to acceptable levels, modification of stipulations is fully justifiable if analyzed through the NEPA process with appropriate public involvement. Each resource concern underlying the NSO stipulation has been addressed in the EIS, draft and final, and it finds that 1) by careful location and design of the road, areas of steep slopes and erosion hazard are avoided; 2) the Forest Plan visual quality objective can be met; 3) the recreation value is not high when evaluated by the criteria on page IV-37 of the Forest Plan; and 4) the area involved is not within the Christmas Meadows Recreation withdrawal. All practicable means have been adopted to avoid or minimize environmental impacts that may result from the alternative selected. The selected alternative incorporates the mitigation measures, road and drill pad construction criteria and Best Management Practices discussed in the EIS. The Forest-Wide and Management Area Standards and Guides also ensure environmental impacts are minimized. Therefore, I believe it appropriate to authorize the granting of an exception to the NSO stipulation.

The drill site location is not located in an area with a NSO stipulation.

We will authorize the use of existing off lease Forest System roads

Chevron will be authorized to use the following existing Forest Roads. These roads are necessary to provide access between Highway U-150 to the lease unit:

1. Stillwater Road (Forest Road #057) from its junction with Highway U-150 to its junction with the Peninsula Road. Approximately 0.8 mile.

2. Peninsula Road (Forest Road #306) from its junction with Stillwater Road to lease unit boundary (halfway mark in Section 5, T.1N., R.10E.). Approximately one mile.

We will modify the existing Travel Plan

The Wasatch-Cache Travel Plan which governs vehicular access to National Forest lands, including use of off-highway vehicles, will be updated to show the road from the bridge over the Stillwater Fork to the new bridge on the Main Fork as a designated route for public travel once construction and drilling operations have been completed. The road behind the existing bridge on the Stillwater Fork will be closed to all public motorized travel from September 15 until such time in the following spring that road conditions and goshawk activity permit. The opening of the road will be determined by district personnel in consultation with a professional wildlife biologist. This action will promote a higher quality hunting experience and will provide greater security for migrating elk in November. In addition, the spring restrictions will minimize road damage and disturbance to goshawks during the nesting period.

We will redelineate designated old-growth tree stand boundaries through a nonsignificant Forest Plan amendment

In the Forest Plan, old-growth stands of conifers were identified for protection. When these stands were identified, the existing Peninsula Road did not appear on any of the maps being used and consequently the designated stand included a road which split the stand into sections having approximately 25 and 284 acres apiece. During the process of this analysis, lands of the same capability classification were located directly adjacent to the larger of the two sections. Twenty five acres will be added to the larger section and designated for protection to replace the smaller section.

We will require monitoring to ensure management activities have the anticipated impacts and consequences

Implementation of the preferred alternative requires monitoring of sensitive wildlife species and water quality.

Goshawk Nest Monitoring.
Monitoring of the goshawk nest will be conducted by Forest Service biologists at all stages of the project to determine if and at what point project activity is having a detrimental effect. If a detrimental effect is detected, additional mitigation will be evaluated to reduce that effect.

Water Quality Monitoring.
A Water Quality Monitoring Plan has been developed and implemented for the project area to:

- Provide a baseline for ongoing and future monitoring and analyses;
- Demonstrate compliance with water quality standards;
- Provide a basis for the validation of the assumptions used in this analysis;
- Assure and demonstrate timely implementation of practices required to protect water quality and water resources, and;
- Assess the effectiveness of Best Management Practices and other Soil and Water Conservation Practices, and to provide a feedback mechanism to correct or improve those practices if they are not meeting objectives.

Chevron, under the Forest Service's supervision, will ensure this monitoring is completed to those standards described in the FEIS.

We will close 1.3 miles of existing roads to public use

The closure of 1.3 miles of existing road, in addition to the obliteration of 2.4 miles of Main Fork Road, will keep the miles of road open to the public constant with that open prior to this project. The 1.3 miles of road to be closed is just south of the Lily Lake sewage treatment plant and paralleling the overhead power line. This closure would result in a zero net gain in road density in this Road Management Unit.

REASONS FOR THE DECISIONS

There are many people interested in what we do (or do not do) in management of the Main Fork drainage. I am very much aware that many of these people want to preserve the Main Fork in its present condition; I can appreciate this. I am also very much aware of the multiple use role that is the National Forest's mandate.

Having read the public comments on the Draft Environmental Impact Statement and talked with many of the people interested in and affected by the decisions I have to make, I realize no decision I make will satisfy everyone. I can only reaffirm that I have listened to people's comments and concerns and taken them into account.

One of the primary considerations I have taken into account in making this decision is the land allocations of the Forest Plan, approved following a great deal of public involvement in 1985. This area is to be managed for a variety of purposes including livestock grazing, timber management, and potential oil and gas development. The area is to continue to provide recreation opportunities, quality water, and wildlife habitat. This area was leased for oil and gas exploration and development. Thus, the decision I have to make here is whether or not the proposal presented by Chevron is consistent with laws and regulations governing management of this National Forest; with the Forest Plan management direction for the area; and with the intent underlying the existing lease and its associated stipulations. In addition, the proposal has been studied to determine if there are any resource concerns that were not understood when the lease was granted and to determine if resource protection and management concerns could be addressed through mitigation, management requirements, monitoring and so on. I believe the proposal by Chevron, as it has been modified by this decision and with the described mitigation and monitoring requirements is consistent with laws, regulations, the Forest Plan, and the rights granted in the lease.

Another consideration in making this decision was the recently completed eligibility inventory for Wild and Scenic Rivers and the associated analysis of effects this proposal may have on rivers found to be eligible. The portion of the Stillwater River from the wilderness to its confluence with the Bear River was found to be eligible for possible inclusion in the Wild and Scenic Rivers system. Since an existing road and bridge would be used to cross the Stillwater and little roadwork would be done within the visual corridor of the river, this project would not affect the free-flowing character of the river, the outstandingly remarkable scenic value of the river or its classification.

It seems to me that a lot of the discussion about the decisions we have to make centers around what is appropriate within an area that is currently unroaded and relatively pristine. Construction of the drill pad and access road will affect approximately 1095 acres of land that has roadless characteristics. Although there has, historically, been human activities in the area (railroad tie cutting, for example), much of the area is considered roadless and was considered for inclusion in the Wilderness system. Congress, in the Utah Wilderness Act of 1984, did not include these acres in their designation of the High Uintas Wilderness. The area between the Wilderness boundary and the inventoried roadless area boundary was released by the 1984 Wilderness Act for multiple use management.

In the Congressional records, the House report states:

> "The Forest Service's boundary on the north slope from the East Fork of Black's Fork west to Hell Hole Lake was pulled back in order to exclude areas of keen interest for oil and gas exploration and

possible development. In making these deletions, the Committee would emphasize that the deleted lands have excellent wilderness potential (they comprise some of the lands most readily accessible to residents of the Salt Lake City area and contain several popular trails) and that oil and gas activities should be conducted in such a manner as will minimize environmental disruption and protect wildlife and recreation values. In the event that oil and gas exploration indicates a lack of commercially valuable hydrocarbons in the area, the Committee believes a future Congress may wish to reconsider the wilderness potential of these lands."

The Senate report states:

"The Committee also notes that the southern flank of the Rocky Mountain overthrust belt extends into the north slope region. The geologic feature may contain substantial oil and gas deposits. The Committee anticipates substantial exploration and possible development of those resources north of the wilderness boundary consistent with the National Environmental Policy Act and other applicable law".

The Forest Plan, in providing management direction for the Forest, designated the area directly adjacent to and including the project area as suitable for timber management; available for oil and gas leasing, and where one could expect to find recreational opportunities in a roaded but natural appearing setting. Thus, though the area is currently roadless, it was not expected to remain roadless as a result of implementation of the Forest Plan.

In spite of these decisions, some people, I know, regard any development of previously unroaded tracts of National Forest to be an unacceptable intrusion, regardless of the size of the area involved. Not only do they not want any development of areas not currently developed, but some recognize that in the future Congress could add to the designated Wilderness from the acres of inventoried roadless lands that have remained unroaded. I am very much aware of the characteristics the Main Fork drainage has. The difficult access has kept the number of visitors to a minimum and those people who have been able to find their way into the area and higher up into the Wilderness, at many times, may have had the place to themselves. I can appreciate this.

As most people know, it is my responsibility to balance competing, often mutually exclusive, expectations and demands to arrive at my decision. I feel my decision provides for resource development while minimizing impacts to the special intangible attributes of the Main Fork drainage.

I want to note one area of public comment regarding the roadless area. Approximately 2120 acres of Roadless Area 19001 (High Uintas Roadless Area) as defined in the 1983 inventory are within the Main Fork drainage area. Depending on one's perception and values, the proposed action in this decision will directly and indirectly modify approximately 730 acres (about 34 percent of the roadless area within the Main Fork drainage). The Forest Service recognizes that there are lands outside of the High Uintas Roadless Area which also contain roadless characteristics (approximately 2645 acres within the Main Fork drainage) and consequently more acres are being modified by the proposed action (approximately 1095 acres or 41 percent of the roadless area within the Main Fork that they recognize).

Thus, while there are impacts on the roadless characteristics of the roadless area, I believe they are within the realm of impacts assumed for the area when the Utah Wilderness Act released the area from consideration for wilderness designation and the Forest Plan allocated the area to various management activities that might require roading and development. There are about 64,770 acres (1 percent decrease) of Roadless Area 19001 remaining in an undeveloped condition across the North Slope.

I have reviewed the significant issues and the comment letters and feel I understand how various interest groups are affected. I have also studied the Environmental Consequences, Chapter IV in the EIS, and am satisfied that the basic soil, water and air resources will not be unacceptably affected by my decisions. I have reviewed Forest Plan direction and feel that the goals and objectives will be met. Some of those goals specifically related to the issues are:

Goal #1, p. IV-1: "Provide the National Forest's share of developed recreation opportunities for all segments of the public."

Goal #5, p. IV-4: "Provide a broad spectrum of low cost dispersed recreation opportunities. Encourage other landowners to provide opportunities also."

Goal #11, p. IV-6: "Protect the cultural resources located on the Wasatch-Cache National Forest from land disturbing activities and public vandalism."

Goal #31, p. IV-12: "Maintain existing water quality on all surface waters of the National Forest to comply with State water quality standards and anti-degradation policy."

Goal #36, p. IV-14: "Integrate the exploration and development of mineral and energy resources on the Forest with the use and protection of other resource values."

Goal #37, p. IV-14: "Administer the mineral resources of the Wasatch-Cache National Forest to provide for needs of the American people and to protect and conserve other resources."

The Chief of the Forest Service, in a letter dated June 4, 1992, directed us to use an ecological approach in the multiple-use management of the National Forests. By that, he said he means "that we must blend the needs of people and environmental values in such a way that the National Forests and Grasslands represent diverse, healthy, productive, and sustainable ecosystems." Two of the four basic management principles he cites are particularly relevant here.

-- "Take Care of the Land" by protecting or restoring the integrity of its soils, air, waters, biological diversity and ecological processes.

-- "Use Resources Wisely and Efficiently to Improve Economic Prosperity" of communities, regions, and nations by cost-effective production of natural resources such as wood fiber, water, minerals, energy, forage for domestic animals, and recreation opportunities.

I believe the decision I make here protects the land and resource values, with the exception of the roadless values associated with 1095 acres while at the same time affording wise exploration for energy resources.

I am satisfied that the decisions I have made here have no effect on the viability of the sensitive wildlife and plant species found in the area. After reviewing the Biological Assessment/Evaluation and Environmental Consequences, Chapter IV in the EIS, I feel comfortable that the Proposed Action would not adversely affect these species' viability. Guidance regarding habitat inventory and/or protection presented in the Biological Assessment/Evaluations for all sensitive species will be followed.

I have also reviewed the Biological Assessment/Evaluation to disclose the effects of management activities on threatened and endangered species. It indicates that no critical habitat is found within the project area and that no threatened or endangered species will be affected.

I am, however, well aware of the other wildlife species, game and non-game, which depend on the area's ability to provide food and security. I am comfortable that this project will not eliminate either food or security cover to the point of significantly affecting wildlife numbers. By restricting public motorized access after September 15, game animals will not be pressured to leave the area and should allow for a quality experience during hunting season. Experience with the oil fields on the Mountain View Ranger District and the Big Piney Ranger District, Bridger-Teton Nation Forest, has shown that even if the well is a producer, by managing traffic, big game wildlife species will not vacate the area and can adapt to the activity.

I am aware of the stress humans can place on big game wildlife species especially during periods where the animals are using significant amounts of energy. The condition they arrive in at their winter ranges depends to a degree on the stress they encounter during their migration from summer ranges. Elk from the Stillwater and Main Fork drainages will concentrate together and migrate through the Peninsula area

during November. I am comfortable that the travel restriction to public motorized vehicles from September 15 to the following spring will adequately mitigate the stress humans will place on the elk during their migration. I am also satisfied that the restrictions placed on the use of the roads behind the Stillwater bridge will minimize any negative impact to goshawk habitat.

PUBLIC INVOLVEMENT

Integral to and initiating the environmental analysis process is the solicitation of comments from the various Federal, State, County, and local agencies, and interested organizations and individuals to assist in incorporating the most accurate and current environmental information and public opinion into planning and decision making. The initial opportunity to comment on the project was "scoping" - an information-gathering process open to the public early in the process.

In early September 1991, the Forest mailed a scoping document in the form of a newsletter to the 227 parties on the project mailing list. On September 17, 1991, a Notice of Intent to conduct environmental analysis was published in the Federal Register. The scoping period ended in early October 1991.

A total of 116 commentors responded to the solicitation. The comments received were reviewed and summarized, and assisted in identifying the range, or scope, of issues and concerns to be addressed during the environmental studies in preparation of the environmental document. The comments ranged from full support of the project to strong opposition. Issues identified from the comments are listed below.

(1) The effects of drilling and production of the oil well on local and state economies. Concerns were expressed regarding the effects of this project and potential subsequent oil projects (primarily production), to local, State, and Federal economies. Development would provide economic benefits; from tax revenues, jobs, goods and services; for the affected State and local economies, as well as the Federal government. Such benefits would alleviate tax burdens and provide needed funds for the affected communities. Also, the increase in domestic production of energy resources would reduce the United States' dependence on foreign energy resources.

Other concerns were expressed that the potential economic benefits would be negligible compared to the potential effects to the natural resource values of the area.

(2) The effects of drilling and production of the oil well on the values and characteristics of the roadless area. Concerns were expressed regarding the potential impacts to the roadless area. Some individuals believe that new roads in the area would result in increased human intrusion and cause irreparable change to the roadless area. They believe that the values of solitude provided by the area are unique and should not be affected.

(3) The effects of drilling and production of the oil well on wildlife species and habitat. Concerns were expressed regarding the potential effects to the wildlife and habitat of the area, which is presently undiminished.

(4) The effects of drilling and production of the oil well on existing recreation uses in the area. Concerns were expressed that the effects of the project would alter the recreational setting and experience presently provided by the area. Roads introduced into the area would provide access for vehicles and promote increased human activity. Recreationists favoring rustic, dispersed recreation opportunities believe that the uses of recreation and the drilling and production of the oil well are incompatible and oppose development in this area. Expressed in relation to this concern, were the effects of this project on other resources such as wildlife, habitat, water, etc. (which are included in discussions of other issues).

Other recreationists favor the opportunity for increased access into these areas - leaving roads open to the public, reclaiming the well site upon completion of project activities, and developing recreation sites such as trailheads.

(5) **The effects of drilling and production of the oil well on road management in the future.** As mentioned previously, some individuals expressed concern that roads introduced in the area would provide access for vehicles and promote increased human activity - resulting in both direct and indirect impacts to the area.

Other recreationists favor the opportunity for increased access into these areas - leaving roads open to the public.

(6) **The effects of drilling and production of the oil well on water quality in the Stillwater drainage.** Concerns were expressed that ground-disturbing activities associated with the project (construction, drilling, and production) would disturb soils and could cause consequent effects on soils and water. Potential effects to soils include compaction, displacement, and loss of vegetation cover resulting in erosion. Soil-disturbing activities, such as construction and vehicular traffic, could result in erosion, or other displacement of soils (for example, at stream crossings) may cause sedimentation in streams with consequent degradation of water quality and aquatic habitat (for example, fisheries).

Other effects to water quality could result in contamination of ground and surface water from possible fuel and/or oil spills.

(7) **The effects of drilling and production of the oil well on the aesthetic and visual characteristics of the area.** Concerns were expressed regarding the effects of project activities on the natural beauty of the area, particularly from the Mirror Lake Highway. Some comments addressed the temporary nature of the activities that are considered most obtrusive to the character of the area (that is, primarily drilling).

(8) **The effects of drilling and production of the oil well on the water supply to the Christmas Meadows summer-home area.** Concerns were expressed regarding the potential effects of project activities on the quantity of nearby spring water used for domestic use by the residents of the Christmas Meadows summer-home area.

Following review and analysis of the comments received, project personnel from the Forest met on October 31, 1991, to discuss the issues and determine the type of documentation needed. Public comments demonstrated a wide range of concern over effects of introducing a road into a roadless area. The decision to prepare an environmental impact statement (EIS) rather than an environmental assessment was made. A Notice of Intent to prepare an EIS was published in the Federal Register on January 8, 1992. Public comments were accepted until January 31, 1992. These comments plus comments received during the scoping period were used in directing the preparation of the EIS.

The Draft Environmental Impact Statement (DEIS) was released for public review in December, 1992. Copies of the DEIS were sent to all interested parties identified during the scoping process and appropriate local, State and Federal agencies. Two public open houses were held (Salt Lake City, Utah, and Evanston, Wyoming). In addition, a public meeting was held in Salt Lake City, Utah at the request of the public. The purpose of the open houses and public meeting was to answer questions, clarify parts of the document, and gather comments.

One hundred twenty one letters were received during the comment period which ran from December 24, 1992 to February 19, 1993. All comments were reviewed, including those received after the February 19, 1993 deadline, and are on file and available for public review at the Evanston Ranger District office. The Forest reviewed and considered these, and the comments received at the open houses and the public meeting. Changes in the Final EIS (FEIS) were based upon the comments and on further analysis by the Forest Service. No decisions were based upon the quantity of comments received on a particular issue.

Numerous respondents either favored or opposed the proposal, or made personal statements of preference. These people are directed to my rationale for my decision within this Record of Decision which explains the reasons for the decisions I have made.

ALTERNATIVES CONSIDERED

The intent was to formulate a range of reasonable alternatives that addressed the issues developed during the scoping and public involvement process. Other alternatives were considered, but for various reasons were eliminated from detailed analysis as documented in the FEIS. The following were considered in detail.

Well Site Locations

1. Alternative NA (No Action)

This is the "No Action" alternative required by the Council of Environmental Quality regulations implementing the National Environmental Policy Act (NEPA). The "No Action" means the project would not be implemented as proposed.

2. Well Site A (Preferred Well Site Alternative)

The Well Site would be located in T.1N., R.10E., SW 1/4 SW 1/4 of Section 16. The pad would occupy approximately 3.43 acres on the west slope of the Main Fork drainage.

3. Well Site B

The Well Site would be located in T.1N., R.10E., NW 1/4 NE 1/4 of Section 21. Pad size would be the same as above; however, it would be located on the top of the ridge separating the Main Fork drainage from the Stillwater drainage. It also would require an additional 1.6 miles of road above that described in #2 above.

Access Alternatives

1. Stillwater/Peninsula Road (Preferred Road Location Alternative)

Road construction would involve upgrading 0.8 mile of the Stillwater Road, upgrading 2.1 miles of the Peninsula Road, constructing 2.0 miles of road on the east side of the Main Fork, constructing a bridge across the Main Fork, and constructing 0.8 mile of road the rest of the way to the well site.

Two other road location alternatives and helicopter access were considered but eliminated from detailed analysis.

Road Management Alternatives

1. Open Road Management Alternative (Preferred Alternative)

All of the road used for access except for the last 0.8 miles leading to the drill pad would be open to the public once construction and drilling operations are completed. A seasonal closure to the public beginning at the existing Stillwater bridge will be implemented from September 15 to sometime after May 1, depending on weather and road conditions. Public use would not be allowed past the Stillwater bridge during the nesting period when the goshawk nest adjacent to the Peninsula Road is occupied. A small parking/trailhead area will be constructed near the end of the existing jeep trail to be used by hikers heading into Hell Hole basin.

2. Closed Road Management Alternative

The road starting at the Stillwater bridge would remain closed to public motorized travel at all times.

3. Reclaimed- or Rehabilitated-Road Management Alternative

If the well is unsuccessful, the new road from the end of the Peninsula Road into the drill site would be reclaimed and reseeded.

Gravel Source Alternatives

Source C (Preferred Gravel Source Alternative)

This source is located in NE1/4 NE1/4 of Section 8, at the end of the Peninsula Road. The site contains more clay-type binding material and would provide more stable, longer lasting surfaces. It appears to have enough minute (fines) particles and rocks to make gradation without large piles of rejected material.

Two other gravel sources were considered but eliminated from detailed analysis.

ENVIRONMENTALLY PREFERRED ALTERNATIVE

Alternative NA (No Action) is the environmentally preferred alternative. Implementation of this alternative would result in little or no ground disturbing activities in the short term.

FINDING REQUIRED BY OTHER LAWS

The Forest Plan has been reviewed and a determination made that this decision is consistent with the Wasatch-Cache Forest Plan. The actions in this project comply fully with the goals of the Forest Plan, the Management Area Direction and the Forest-Wide Standards and Guidelines with the following exception:

The redefined old growth stands need to be designated and the currently designated old-growth stands eliminated as previously described.

Specific changes made are documented in the attached plan amendment. The analysis of these changes is included in the EIS. I conclude that this is a nonsignificant amendment to the Forest Plan.

Floodplains, wetlands, prime lands, threatened and endangered species, and cultural resource management implications have been considered and these resources will not be adversely affected.

The goals in the Forest Plan are on pages IV 1-23. Forest Wide Standards and Guides are on pages IV 24-50. The Management Areas involved on the North Slope are on pages IV 73-104.

MITIGATING MEASURES

All practicable means have been adopted to avoid or minimize environmental impacts that may result from the alternative selected. The selected alternative incorporates the mitigation measures, road and drill pad construction criteria and Best Management Practices discussed in the EIS. The Forest-Wide and Management Area Standards and Guides also ensure environmental impacts are minimized. In addition to the mitigation measures identified in the EIS in Chapters 2 and 4, and the Biological Assessment/Evaluation, the following EIS Appendices contain additional descriptions and clarification:

Appendix A - Authorizing Actions
Appendix B - Application for Permit to Drill and Surface Use Plan
Appendix C - Road Construction Criteria
Appendix D - Summary of Mitigation and Monitoring
Appendix E - Erosion Control and Reclamation

IMPLEMENTATION DATE AND APPEAL OPPORTUNITIES

This decision may be implemented 45 days after publication in the Salt Lake Tribune. Copies of this Record of Decision, EIS, and the file of public comments are available for public review at the following location:

Wasatch-Cache National Forest
Evanston Ranger District
1565 Hwy 150 South, Suite A
Evanston, WY 82930

This decision is subject to administrative review pursuant to the appeal regulations, 36 CFR 215. Any appeal of this decision must be fully consistent with 36 CFR 215.14. Two copies of the Content of Notice of Appeal, including the reasons for appeal, must be filed with the Regional Forester, Intermountain Region, 324 25th Street, Ogden, UT 84403, within 45 days from the date of publication in the Salt Lake Tribune.

For further information contact Stephen Ryberg, District Ranger, at the Evanston Ranger District or telephone (307) 789-3194.

Susan Giannettino

SUSAN GIANNETTINO
Forest Supervisor
Wasatch-Cache National Forest
8230 Federal Building
125 South State Street
Salt Lake City, UT 84138

1/6/94
Date

WASATCH-CACHE LAND AND RESOURCE MANAGEMENT PLAN

AMENDMENT NO. 20

Effective 1/4/94

POSTING NOTICE: Attach enclosed map to Forest Plan Map 8. No changes in specific Forest Plan wording are required for this amendment.

Explanation:

The analysis to substantiate this change is in the Environmental Impact Statement for Table Top Prospect Oil and Gas Well.

This amendment is a non-significant amendment to the Wasatch-Cache Land and Resource Management Plan. It changes the boundary of a designated old growth stand. In the Forest Plan, old growth stands of conifers were identified for protection. When these stands were identified, the existing Peninsula Road did not appear on any of the maps being used and consequently the designated stand included a road which split the stand into sections having approximately 25 and 284 acres apiece. During the process of this analysis, lands of the same capability classification were located directly adjacent to the larger of the two sections. Twenty five acres will be added to the larger section and designated for protection to replace the smaller section.

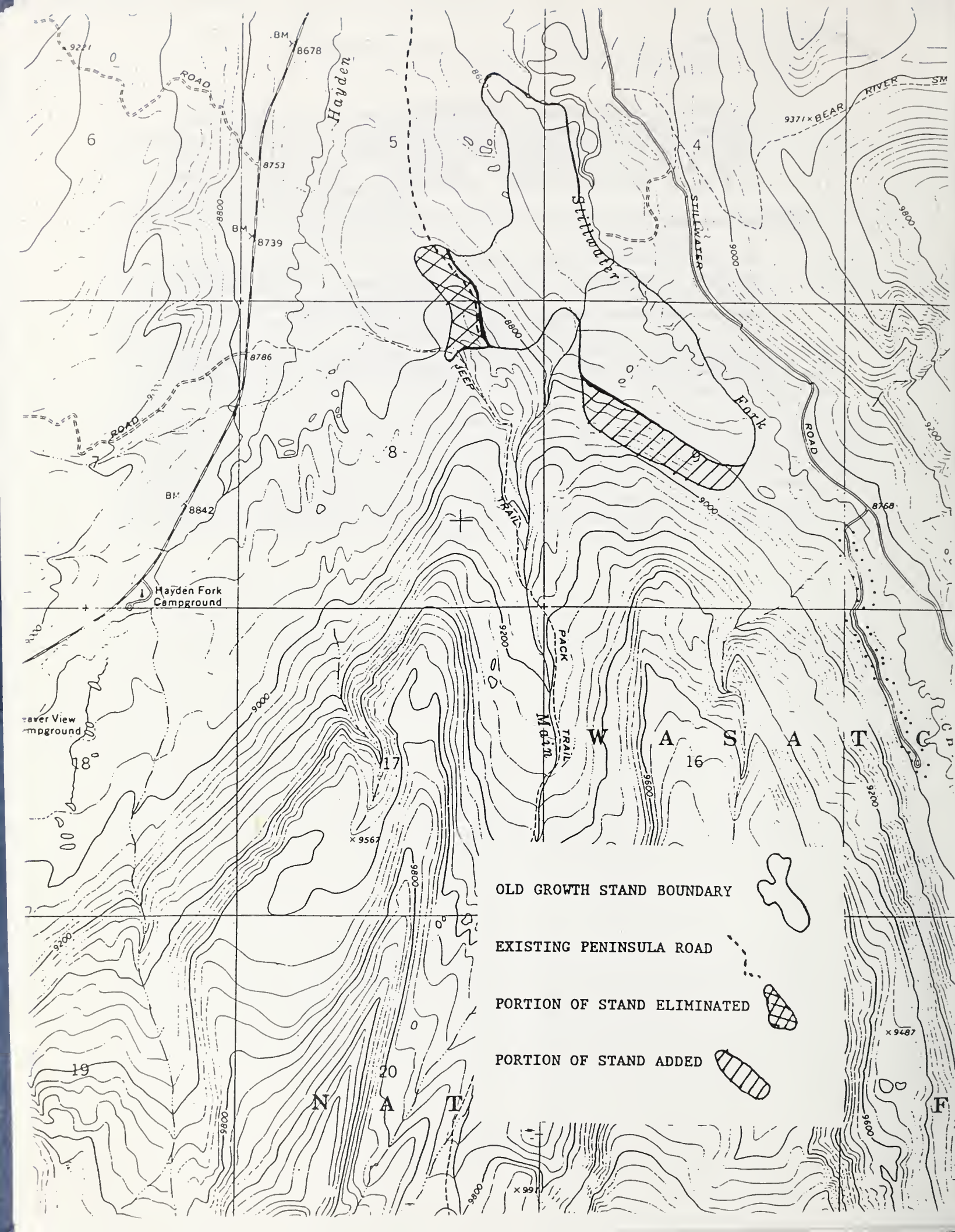
Old Growth Stands

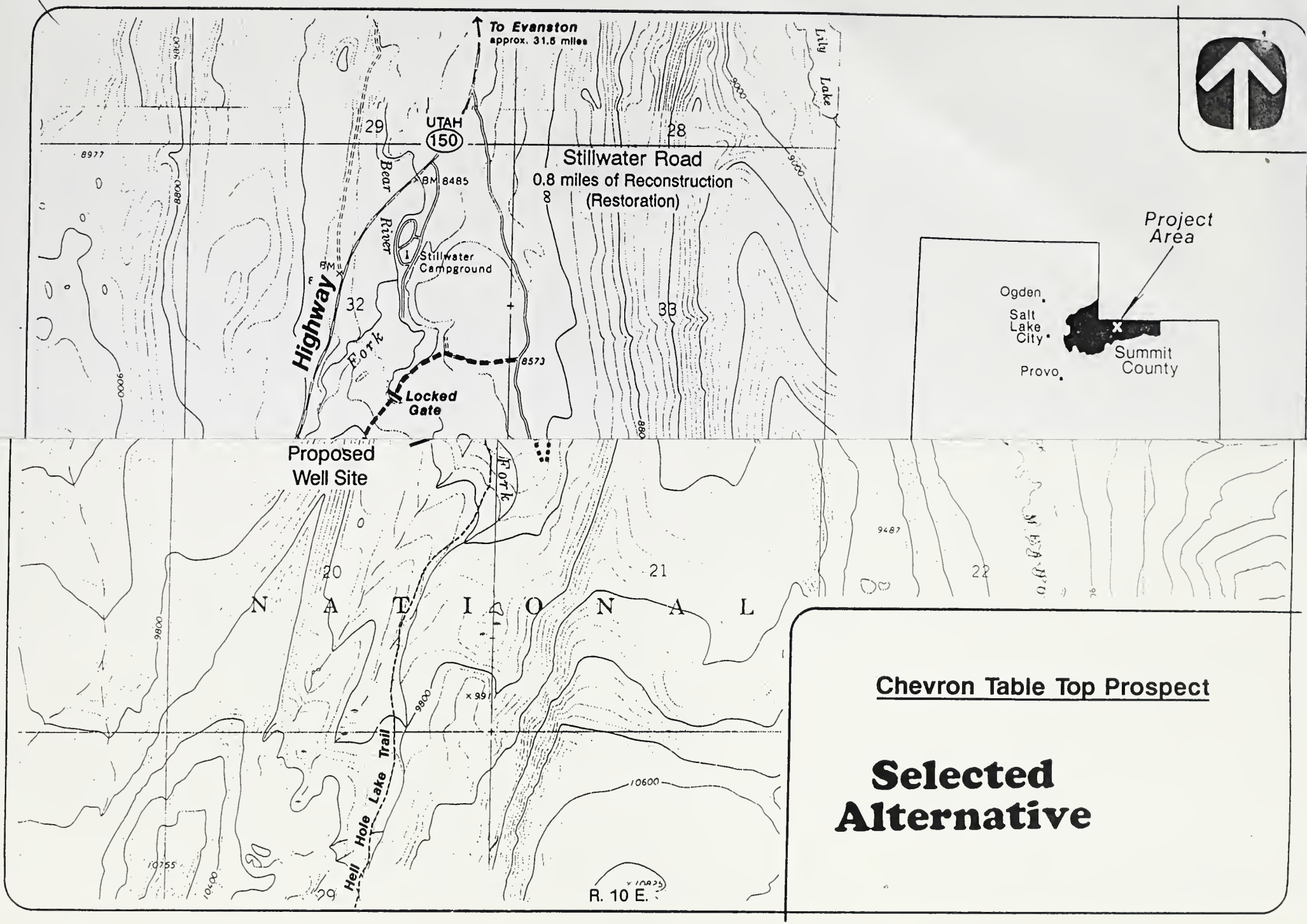
Current Location:

The Old Growth Stand Map, (Map #8) included in the Forest Plan package, shows the location of the designated old growth stand within the project area. T.1N., R.10E., SW1/4 NW1/4, W1/2 SW1/4, SE1/4 SW1/4, Section 4; SE1/4 NE1/4, E1/2 SE1/4, SW1/4 SE1/4, Section 5; N1/2 NE1/4, Section 8; NW1/4, W1/2 NE1/4, NW1/4 SE1/4, Section 9.

Amended Location:

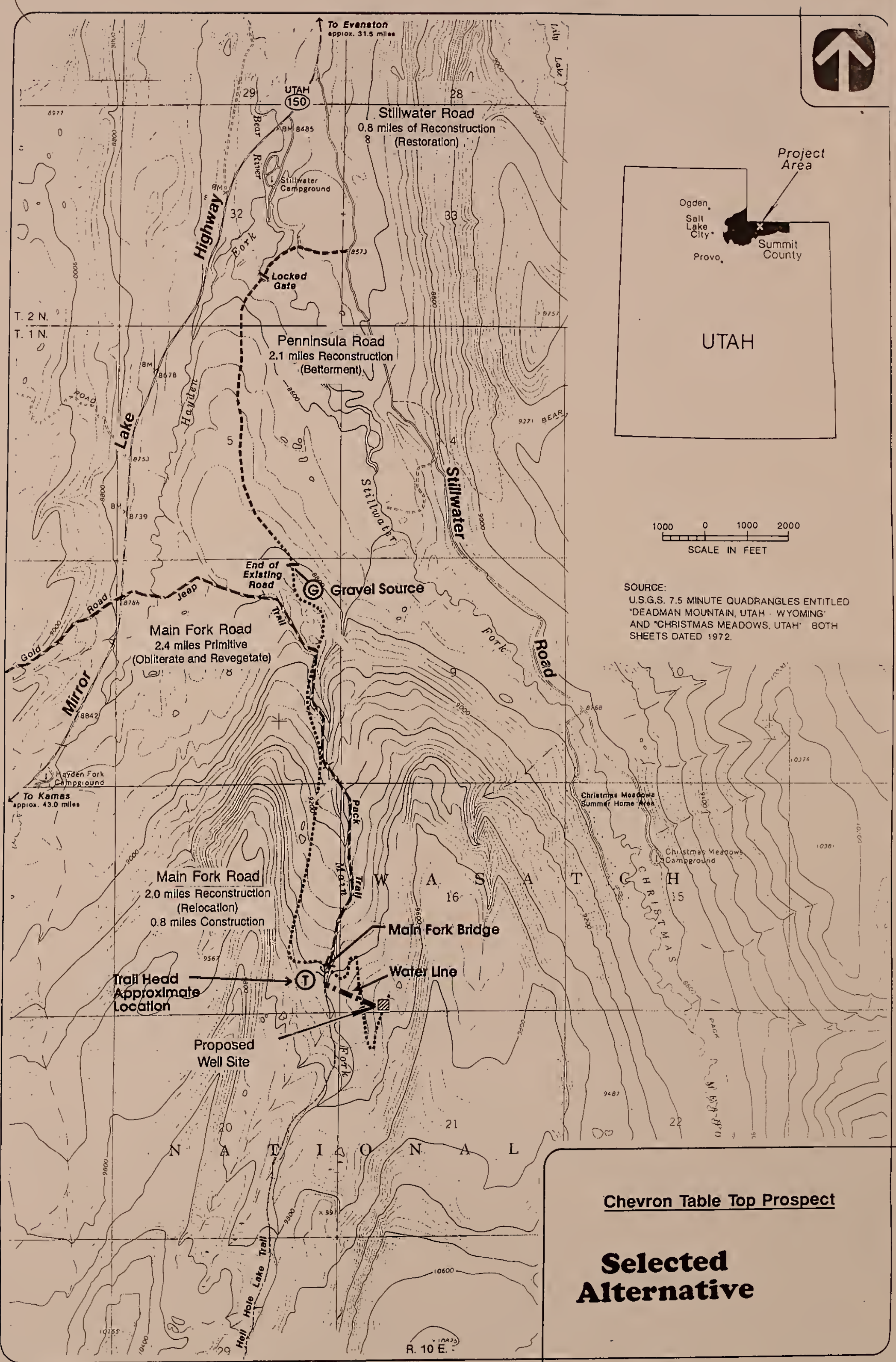
The Old Growth Stand Map, (Map #8) included in the Forest Plan package, is amended to reflect the adjustment of stand boundaries as shown on Figure 3-5 in Chapter three of the Exploratory Oil Well - Chevron Table Top Prospect EIS (copy attached) and as described here: T.1N., R10E., replace old growth stand on west side of Peninsula Road (Forest Road No. 306) in SW1/4 SE1/4, Section 5; and NW1/4 NE1/4, Section 8 with timber stand in S1/2 NW1/4, NE1/4 SW1/4, NW1/4 SE1/4, Section 9.


OLD GROWTH STAND BOUNDARY
EXISTING PENINSULA ROAD
PORTION OF STAND ELIMINATED
PORTION OF STAND ADDED
Hayden Fork Campground
Beaver View Campground
Hayden
Stillwater
Fork
PACK TRAIL
Main
JEEP TRAIL
ROAD
BEAR RIVER
STILLWATER
BM 8678
BM 8739
BM 8842
8753
8786
8768
9371
9561
9487
9991
WASATCH
NAT
F



Chevron Table Top Prospect

Selected Alternative



Chevron Table Top Prospect

Selected Alternative

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